63-3-5

PROGRESS REPORT NUMBER 23

FOR

FEBRUARY 1, 1963 TO MARCH 31, 1963

DESIGN, DEVELOPMENT AND FABRICATION OF BAROSWITCH, REMOTE XM-10; BAROSWITCH, PRESET XM-11; AND CONTROL BAROSWITCH SETTING: XT-4126

CONTRACT NO. DA-36-034-ORD-2890A

FOR

PICATINNY ARSENAL, DOVER, NEW JERSEY
ATTN: NUCLEAR WEAPONS GROUP
ORDBB - TV4 - OMS - 5210.12.13210.01.07

PREPARED BY:

THE BENDIX CORPORATION
FRIEZ INSTRUMENT DIVISION
BALTIMORE 4, MARYLAND

APRIL 10, 1963

Bendix-Friez

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REF:
FR-92167
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Bendix-Friez

PROGRESS REPORT NUMBER 23

Period Covered: February 1, 1963 to March 31, 1963

Design, Development and Fabrication of Baroswitch, Remote XM-10; Baroswitch, Preset XM-11; and Control, Baroswitch Setting: XT-4126

Contract No. DA-36-034-ORD-2890A

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PROGRESS REPORT NUMBER 23

DEVELOPMENT OF

BAROSWITCH, XM-10
BAROSWITCH, XM-11
SETTER, XT-4126

I. INTRODUCTION

Included in this report is a discussion of the work done on this project from February 1, 1963 to March 31, 1963. It includes the status of development of the XM-10 and XT-4126 Control Setter.

Also included in this report is a schedule for the work to be done during the period which follows this report period.

II. PROJECT ACTIVITIES DURING REPORT PERIOD

A. Baroswitch XM-10

During this report period, 11 XM-10 baroswitches (S/N 0070, 0071, 0072, 0073, 0074, 0076, 0078, 0079, 0081, 0082, 0084) were shipped to Picatinny Arsenal on Contract Modification 7. S/N 0075 and 0080 were retained at Bendix Friez for vibration testing. In addition, seven baroswitches were placed on 60 day drift tests. S/N 0068 was returned by Picatinny Arsenal to render the motor inoperative and set the elements at 14,000 ft., 24,000 ft., 34,000 ft. and 44,000 ft. This was done, and the unit was returned to Picatinny Arsenal.

A schedule of baroswitches delivered or on drift test under contract modification 7 is included as Appendix "C", and will be included as part of future progress reports until delivery is complete.

During a visit to Bendix-Friez, in the week ending 3-23-63, Mr. J. J. Woods, Picatinny Arsenal Project Officer, gave approval for use of the large diameter (.281 + .005) shoe for the XM-10 program. This item was originally developed for the XM-18 baroswitch program to improve element shift characteristics.

Preliminary copies of the XM-10 Mandatory Process have been given to Picatinny Arsenal for review and comment. Upon completion of this review, the Mandatory Process will become part of the XM-10 drawing system.

During this period two major vibration tests have been conducted. Appendix "A" is a report on testing of two baroswitches solidly mounted to the vibration table to seek minimum "G" levels for contact chatter. Appendix "B" reports on contact chatter tests with Lord mounts permitting a maximum excursion of .125" during 4 "G" testing. Upon reviewing the data in Appendix "B", Mr. Woods gave approval for use of Lord mounts with this elastomer in subsequent deliveries of XM-10 baroswitches.

B. Barosetter, XT-4126A

During this report period the investigation into the instability of the phase angle was continued. As stated in the previous progress report, the phase angle stability could be improved by placing a small capacitance across the primary of the amplifier input transformer, a capacitance in the feedback circuit and padding capacitances across the primary and secondary windings

of the driver transformer. Four setters were modified to receive the phase angle stabilizing capacitors. In achieving optimum performance, it was found that the values of the padding capacitors for both the primary and secondary windings of the driver transformer varied from unit to unit.

On March the twentieth Mr. G. J. Schechter of Picatinny Arsenal visited Bendix Friez to discuss the Evaluation Test Procedure and the general progress of the setter. The problem of the varying padding capacitor values was brought to Mr. Schecter's attention. It was decided that fixed values must be found. Using the four units available, compromise values were found without sacrificing any significant phase angle stability.

In the previous progress report the problem of the circuit breaker tripping frequently for high input voltages and exposure to the low temperature extreme was mentioned. This problem was rectified with a redesigned power supply transformer. It was agreed that all units would have the redesigned power supply transformer installed.

In reviewing the Evaluation Test Procedure, Mr. Schechter stated that all connectors must be protected from exposure to moisture, salt spray and dust. Since the setter did not have these features, it was decided that connector caps and a dummy receptacle will be incorporated on the units and its cables. This necessitated revisions in several of the environmental test procedures. These revisions have been completed and the Acceptance Test Procedure and Evaluation Test Procedure have been submitted to Bendix Friez Quality Control for their approval. Following the approval of the test procedures by Quality Control, they will be submitted to Picatinny Arsenal for approval. The revised Purchase Description is completed and will accompany the test procedures.

A schedule for the environmental tests has been drawn up making use of three setters and is included as Appendix D.

Mr. Schechter agreed that all units presently at Bendix Friez would be retained for the evaluation test. The use of a setter by the Baroswitch group will constitute the setting cycle life test.

The total time for completion of the evaluation test as scheduled is four weeks.

C. Summary

At this time, 22 of the 44 XM-10 Baroswitches of Contract Modification 7 are either delivered or in drift test. The large diameter shoe is now part of the XM-10 Baroswitch program. The Mandatory Process has been written and is being reviewed. Picatinny Arsenal has given approval for the .125" excursion Lord Mounts (see Appendix B) on the remainder of XM-10 baroswitch deliveries.

Four setters have been modified to stabilize the phase angle. Connector caps, dummy receptacles and new power supply transformers are on order to complete the final modifications. The Evaluation Test Procedure, Acceptance Test Procedure, and the revised Purchase Description have been completed and submitted for approval.

D. Man-Hours Expended during Report Period

During this report period, there have been expended approximately:

1113 Hours on Engineering

3578 Hours on Fabrication

III. PROJECT PLANNING SCHEDULE FOR THE NEXT REPORT PERIOD

A. Baroswitch, XM-10

1. Complete assembly of the 44 XM-10 baroswitches under Contract Modification 7, and start assembly of the 50 XM-10 baroswitches required under Contract Modification 9.

2. Continue 60 Day Drift Testing of all XM-10 baroswitches to be delivered.

3. Include the Mandatory Process in the XM-10 Baroswitch drawing system.

B. Setter, XT-4126A

1. Complete modification of the four units presently at Bendix Friez.

2. Install connector protective caps, dummy receptacle and new power supply to the four units.

3. Complete the acceptance test on the four units and begin evaluation testing.

4. Review drawings and submit to Picatinny Arsenal.

Prepared By: D M Potter
D. M. Potter
Engineer

G F Hobday
G. F. Hobday
Engineer

Approved By: F K Davey
F. K. Davey
Chief Engineer
Special Products Group

APPENDIX "A"

CONTACT CHATTER TEST ON SOLIDLY MOUNTED XM-10 BAROSWITCHES

INTRODUCTION:

This report is submitted to Picatinny Arsenal to provide information on recently conducted sinosoidal vibration tests utilizing XM-10 baroswitches of the current design. The baroswitches were solidly mounted to the vibration equipment to determine minimun "G" levels at which contact chatter occurs with a 6 mb contact opening.

Data is presented in tabular and graphic form.

TEST EQUIPMENT AND PROCEDURES:

The XM-10 baroswitches used in this test, Serial Nos. 0075-B3 and 0080-B3, were of the latest design and contained platinum-tungsten crossed-wire contacts, padding resistors to compensate for capsule error, and plate-and-bellows assemblies brazed with Lithobraze BT brazing alloy. The baroswitches passed Government Acceptance Tests prior to vibration.

Each baroswitch was solidly mounted to an orienting fixture by use of aluminum side plates (see attached sketch). The orienting fixture was mounted directly to the vibration equipment.

The baroswitches were set at 50,000 feet for all tests, and a contact aperture of 6 mb was maintained during testing. All elements were set at 116.0 mb prior to testing.

Chatter readouts were made on oscilloscopes, with no provision made in the readout equipment for filtering contact chatter of 50 microseconds or less.

Tests were conducted over the 5 to 2000 cps range, increasing the "G" level until contact chatter was observed or the capacity of the vibration equipment was reached. Limiting factors in the vibration equipment were the amplitude of excursion at the low frequency range, and the allowable field current at the upper frequency ranges.

Data was taken in the X-2, Y-2 and Z-1 axes (see sketch on first graph attached to report).

"G's" were measured with an accelerometer mounted on the orienting fixture.

Tests were conducted on February 11 to 14, 1963.

RESULTS:

The attached tables present information obtained from the two baroswitches during testing. "Lim" following an acceleration value in the table indicates that the capacity of the vibration equipment was reached without any contact chatter occurring.

Graphs attached present the same information.

DISCUSSION:

Inspection of the tables and grpahs show low "G" levels at points listed in the tables below.

X AXIS:

65 cps (12.0 G's)

210 cps (6.7 G's)

230 cps (6.0 G's)

325 cps (3.3 G's)

420 cps (6.0 G's)

560 cps (1.0 G's)

825 cps (2.1 G's)

845 cps (1.5 G's)

1650 cps (<.10 G's)

1660 cps (<.10 G's)

Y AXIS:

330 cps (5.0 G's)

425 cps (9.5 G's)

575 cps (3.6 G's)

625 cps (2.5 G's)

860 cps (2.5 G's)

1000 cps (2.2 G's)

1675 cps (.10 G's)

Z AXIS:

280 cps (6.0 G's)

332 cps (2.2 G's)

650 cps (3.5 G's)

815 cps (1.9 G's)

850 cps (1.7 G's)

1650 cps (.28 G's)

1675 cps (.18 G's)

The above listing does not include every low point on the graphs, but gives an excellent feeling for the isolation characteristics required.

The 1650-1675 cps figures represent the resonant points of the diaphragm assemblies, and the 825-860 cps and 420-425 cps figures are sub-harmonics of that resonant point. Many of the baroswitch components (gear assemblies, element assemblies, motor armature) go into resonance in the 300-500 cps range.

The cause of the 12 "G" reading at 65 cps on Baroswitch No. 0080-B3 is not known, but proper elastomer selection for the Lord mounts will avoid contact chatter in this area at the 4 "G" level.

TABLE 1a

X-2 Axis

CPS	G's Baroswitch No. 0075-B3	0080-B3	CPS	G's Baroswitch No. 0075-B3	0080-B3
5	1.5 (Lim)	2.0 (Lim)	40	30.0	30.0
6	2.3 "	2.3 "	42	29.0	30.0
7	4.5 "	3.7 "	44	30.0	26.0
8	7.0 "	6.5 "	46	30.0	30.0 (Lim)
9	8.5 "	8.5 "	48	30.0	30.0
10	10.0 "	10.0 "	50	25.0	30.0
12	10.2 "	10.5 "	55	25.0	30.0 (Lim)
14	13.5 "	14.5 "	58	24.0	-
16	15.5 "	16.2 "	60	18.0	30.0 (Lim)
18	19.0 "	19.2 "	63	-	21.0
20	22.0 "	22.5 "	65	30.0	12.0
22	26.0 "	28.0 "	70	20.0	24.0
24	30.0 "	33.0 "	75	29.0	24.0
26	30.0 "	35.0 "	80	26.0	22.5
28	30.0 "	32.0 "	85	23.0	23.0
30	30.0 "	35.0 "	90	21.0	23.0
32	30.0 "	30.0 "	95	30.0	20.0
34	30.0 "	30.0 "	100	27.0	22.0
36	30.0 "	30.0 "	105	18.0	17.0
38	30.0 "	25.0	110	24.0	23.5

TABLE 1a
- continued -

X-2 Axis

CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3	CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3
115	18.0	22.5	230	18.0	6.0
120	23.0	16.0	235	-	19.0
125	20.0	16.0	240	15.0	14.0
130	21.0	17.0	245	-	21.0
135	22.5	18.0	250	20.0	21.0
140	19.0	15.0	260	15.0	23.0
145	25.0	23.0	270	14.0	18.0
150	15.0	21.0	275	-	9.2
155	21.0	-	280	14.5	10.0
160	21.0	22.0	285	-	10.5
170	22.0	25.0	290	17.0	17.0
180	19.0	18.0	295	-	13.0
190	18.0	20.0	300	13.0	7.8
200	23.0	21.0	305	-	7.6
205	-	21.0	310	15.0	11.0
210	17.0	6.7	320	10.0	16.0
215	-	17.0	325	3.3	5.8
220	16.0	18.0	330	8.0	4.8
225	-	16.0	333	-	4.0

TABLE 1a
- continued -

X-2 Axis

CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3	CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3
335	-	4.0	565	-	1.4
340	9.4	6.0	575	1.4	1.0
345	-	12.0	590	-	2.6
350	17.0	13.0	600	4.0	5.6
360	17.0	11.0	625	6.5	9.5
370	10.0	12.0	650	9.5	6.5
380	12.0	13.0	675	8.0	8.8
390	12.0	10.0	700	6.0	15.0
400	14.0	9.6	725	6.8	14.5
410	-	10.0	750	8.5	11.5
420	-	6.0	775	10.0	12.0
425	11.0	10.0	800	11.5	11.0
450	14.0	11.5	825	2.1	5.5
475	10.0	11.5	845	-	1.5
500	7.5	13.0	850	4.5	2.8
525	5.0	11.0	900	15.0	3.5
540	-	4.8	950	14.0	5.8
550	3.5	2.6	1000	10.0	8.2
560	1.0	2.3	1050	11.0	13.0

TABLE 1a
- continued -

X-2 Axis

CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3	CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3
1100	9.5	10.0	1950	12.0	4.5
1150	6.0	8.0	2000	13.0	4.0
1200	15.0	17.0			
1250	12.0	14.0			
1300	12.0	20.0			
1350	12.0	15.0			
1400	9.0	11.0			
1450	7.5	5.0			
1500	8.8	4.8			
1550	6.5	5.0			
1600	1.9	1.4			
1625	.16	.55			
1650	<.10	.18			
1660	-	<.10			
1700	.45	.50			
1750	3.2	1.0			
1800	7.0	4.5			
1850	15.0	4.0			
1900	14.0	6.0			

TABLE 1b

Y-2 Axis

CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3	CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3
5	1.5 (Lim)	2.7 (Lim)	40	27.0 (Lim)	23.0 (Lim)
6	2.0 "	3.0 "	42	27.0 "	23.0 "
7	4.0 "	4.5 "	44	27.0 "	25.0 "
8	5.5 "	5.0 "	46	27.0 "	25.0 "
9	6.5 "	6.5 "	48	27.0 "	25.0 "
10	8.0 "	8.0 "	50	27.0 "	25.0 "
12	8.0 "	8.0 "	55-135	27.0 "	25.0 "
14	10.0 "	7.5 "	140	22.0	25.0 "
16	14.0 "	14.0 "	145	27.0 (Lim)	25.0 "
18	17.0 "	17.5 "	150	20.0	25.0 "
20	20.0 "	21.0 "	160	27.0 (Lim)	25.0 "
22	23.0 "	23.0 "	170	21.0	25.0 "
24	23.0 "	23.0 "	180	27.0	25.0 "
26	24.0 "	23.0 "	190	27.0 (Lim)	25.0 "
28	24.0 "	23.0 "	200	27.0 "	25.0 "
30	24.0 "	23.0 "	210	10.0	25.0 "
32	24.0 "	23.0 "	220	27.0 (Lim)	25.0 "
34	26.0 "	23.0 "	230	26.0	25.0
36	27.0 "	23.0 "	240	9.5	20.0
38	27.0 "	23.0 "	250	27.0	25.0 (Lim)

TABLE 1b
- continued -

Y-2 Axis

CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3	CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3
260	16.0	25.0	500	18.0	17.0
270	8.0	23.0	525	11.0	13.0
280	10.0	22.0	550	7.0	6.4
290	16.0	25.0	575	4.5	3.6
300	18.0	25.0 (Lim)	600	9.5	7.0
310	12.0	17.0	625	2.1	7.0
320	10.0	7.2	650	3.5	4.0
330	5.0	5.2	660	-	2.1
335	-	3.5	675	3.5	2.6
340	8.0	6.0	680	-	8.0
350	18.0	13.0	700	6.0	19.0
360	20.0	19.0	725	11.0	21.0
370	20.0	25.0	750	15.0	19.0
380	21.0	25.0	775	17.0	16.0
390	24.0	30.0 (Lim)	800	5.5	11.0
400	25.0	10.0	825	3.7	5.0
425	9.5	25.0 (Lim)	850	2.6	3.5
450	26.0 (Lim)	23.0	860	-	2.5
475	25.0	13.0	875	-	5.0

TABLE 1b
- continued -

Y-2 Axis

CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3	CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3
900	6.5	7.0	1800	16.0	19.0
950	2.8	6.0	1850	19.0	19.0
1000	2.2	4.0	1900	17.0	17.0
1050	3.0	4.0	1950	28.0	18.0
1100	4.5	4.0	2000	21.0	14.0
1150	3.0	4.0			
1200	7.5	5.0			
1250	8.0	7.5			
1300	9.0	11.5			
1350	12.0	9.2			
1400	14.0	7.0			
1450	11.0	5.0			
1500	9.5	6.0			
1550	2.1	7.0			
1600	1.2	6.5			
1650	.21	.75			
1675	-	.10			
1700	.8	2.5			
1750	6.0	16.0			

TABLE 1c

Z-1 Axis

CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3	CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3
5	1.5 (Lim)	1.3 (Lim)	40	25.0 (Lim)	27.0 (Lim)
6	2.1 "	2.6 "	42	26.0 "	27.0 "
7	4.5 "	4.5 "	44	25.0 "	27.0 "
8	5.5 "	5.5 "	46	26.0 "	27.0 "
9	6.5 "	7.5 "	48	28.0 "	27.0 "
10	7.0 "	8.5 "	50	28.0 "	27.0 "
12	7.2 "	8.5 "	55	28.0 "	30.0 "
14	9.5 "	11.0 "	60	27.0 "	30.0 "
16	12.0 "	14.0 "	65	27.0 "	30.0 "
18	15.0 "	17.0 "	70	27.0 "	30.0 "
20	22.0 "	21.0 "	75	26.0 "	30.0 "
22	22.0 "	23.0 "	80	27.0 "	30.0 "
24	25.0 "	22.0 "	85	27.0 "	30.0 "
26	23.0 "	22.0 "	90	27.0 "	30.0 "
28	23.0 "	23.0 "	95	27.0 "	30.0 "
30	23.0 "	23.0 "	100	27.0 "	30.0 "
32	24.0 "	22.0 "	105	27.0 "	30.0 "
34	24.0 "	22.0 "	110	27.0 "	30.0 "
36	25.0 "	23.0 "	115	27.0 "	30.0 "
38	25.0 "	26.0 "	120	27.0 "	30.0 "

TABLE 1c
- continued -

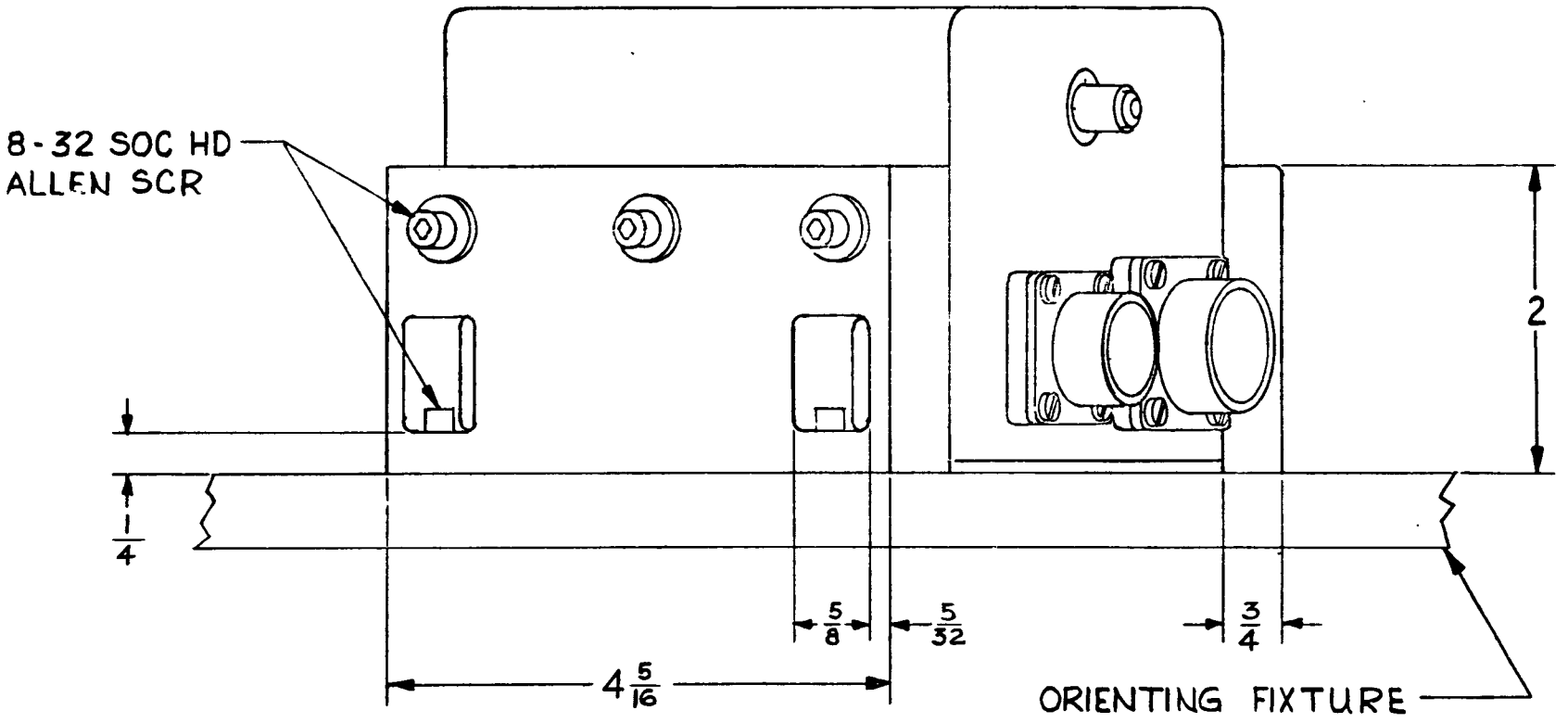
Z-1 Axis

CPS	G's Baroswitch No. 0075-B3	0080-B3	CPS	G's Baroswitch No. 0075-B3	0080-B3
125	27.0 (Lim)	30.0 (Lim)	332	-	2.2
130	19.0	30.0 "	335	-	4.7
135-190	27.0 (Lim)	30.0 "	340	25.0	9.0
200	27.0 "	29.0	350	27.0 (Lim)	19.5
205	-	28.0	360	27.0 "	25.0 (Lim)
210	27.0 (Lim)	10.0	370	27.0 "	25.0 "
215	-	29.0	380	27.0 "	25.0 "
220	27.0 (Lim)	29.0	390	27.0 "	25.0 "
230	27.0 "	26.0	400	27.0 "	25.0 "
240	12.0	10.0	420	7.0	-
250	27.0	26.0 (Lim)	425	20.0	19.0
260	26.0 (Lim)	26.0 "	450	25.0 (Lim)	25.0 (Lim)
270	27.0 "	26.0	475	23.0	25.0 "
280	6.0	9.0	500	15.0	22.0
290	27.0 (Lim)	26.0	525	11.0	20.0
300	27.0 "	26.0 (Lim)	550	8.5	13.5
310	27.0 "	21.5	575	8.0	8.8
320	26.0	14.0	600	6.5	14.0
330	13.0	5.4	625	4.5	10.0

TABLE 1c
- continued -

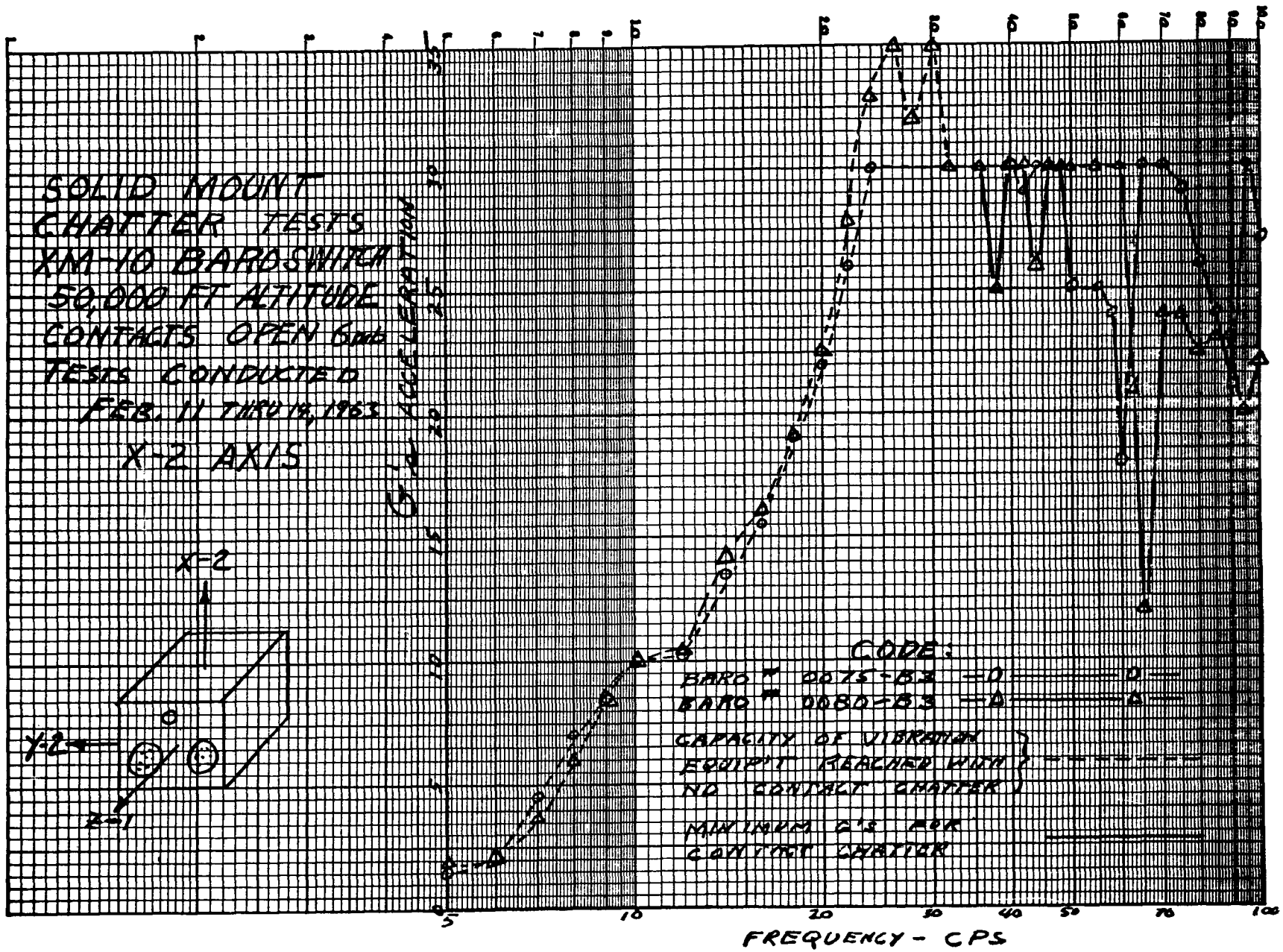
Z-1 Axis

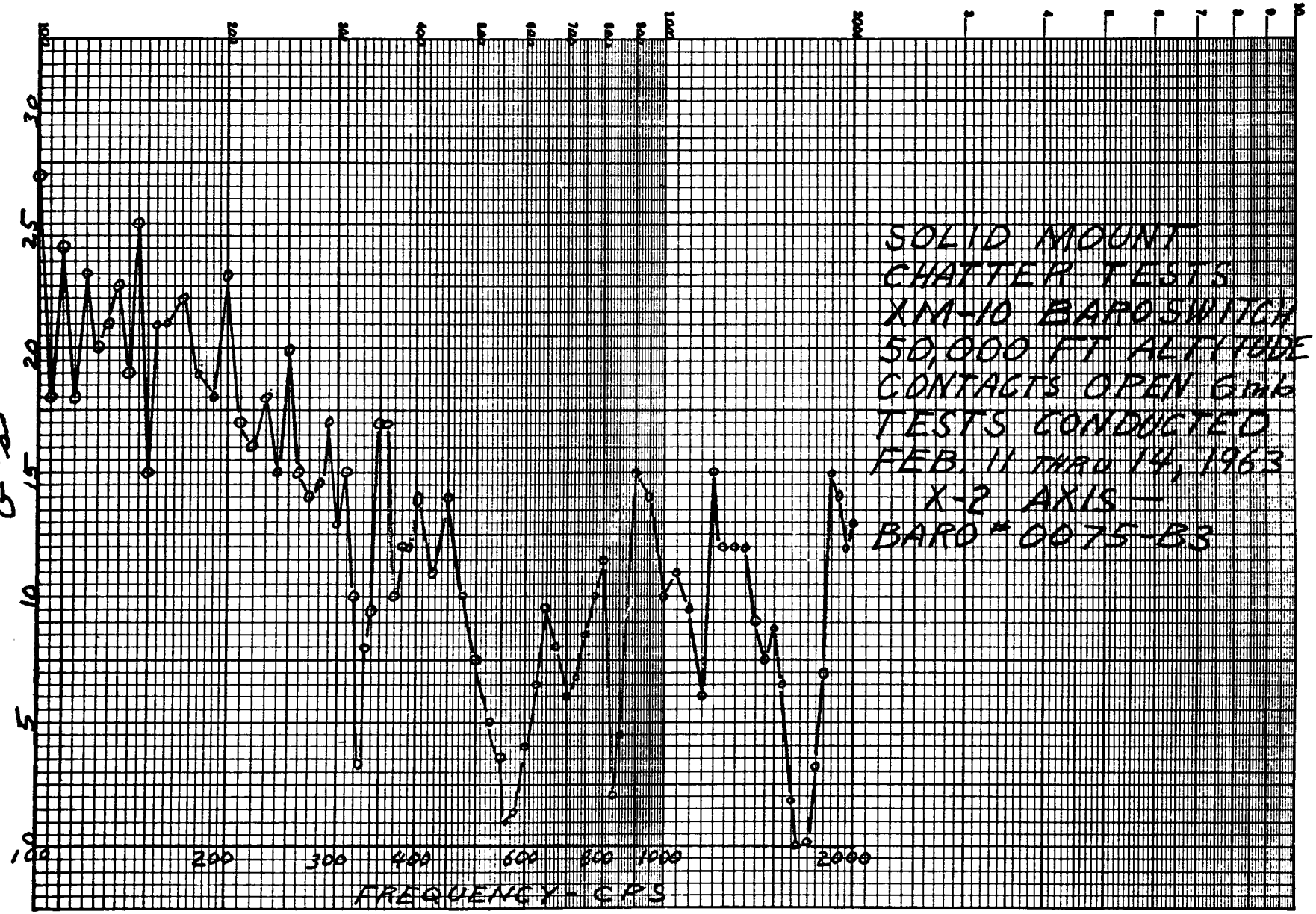
CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3	CPS	G's Baroswitch No. 0075-B3	G's Baroswitch No. 0080-B3
650	3.5	4.0	1150	3.0	5.5
660	-	4.3	1200	8.0	8.5
675	4.0	6.5	1250	7.0	9.5
700	11.0	13.0	1300	8.0	11.0
725	18.0	17.0	1350	7.0	13.0
750	22.0	22.0	1400	5.0	8.5
775	21.0	20.0	1450	4.0	7.0
800	15.0	11.0	1500	4.0	6.2
815	-	1.9	1550	3.5	7.5
825	8.5	3.0	1600	1.9	2.2
835	-	5.5	1650	.28	4.0
850	1.7	2.1	1675	-	.18
860	-	1.7	1700	1.1	1.9
875	2.6	7.0	1750	2.1	3.5
900	7.0	7.5	1800	10.0	10.0
950	4.2	10.0	1850	10.0	16.0
1000	3.6	5.5	1900	10.0	19.0
1050	3.0	4.0	1950	11.0	16.0
1100	7.0	4.5	2000	11.0	14.0

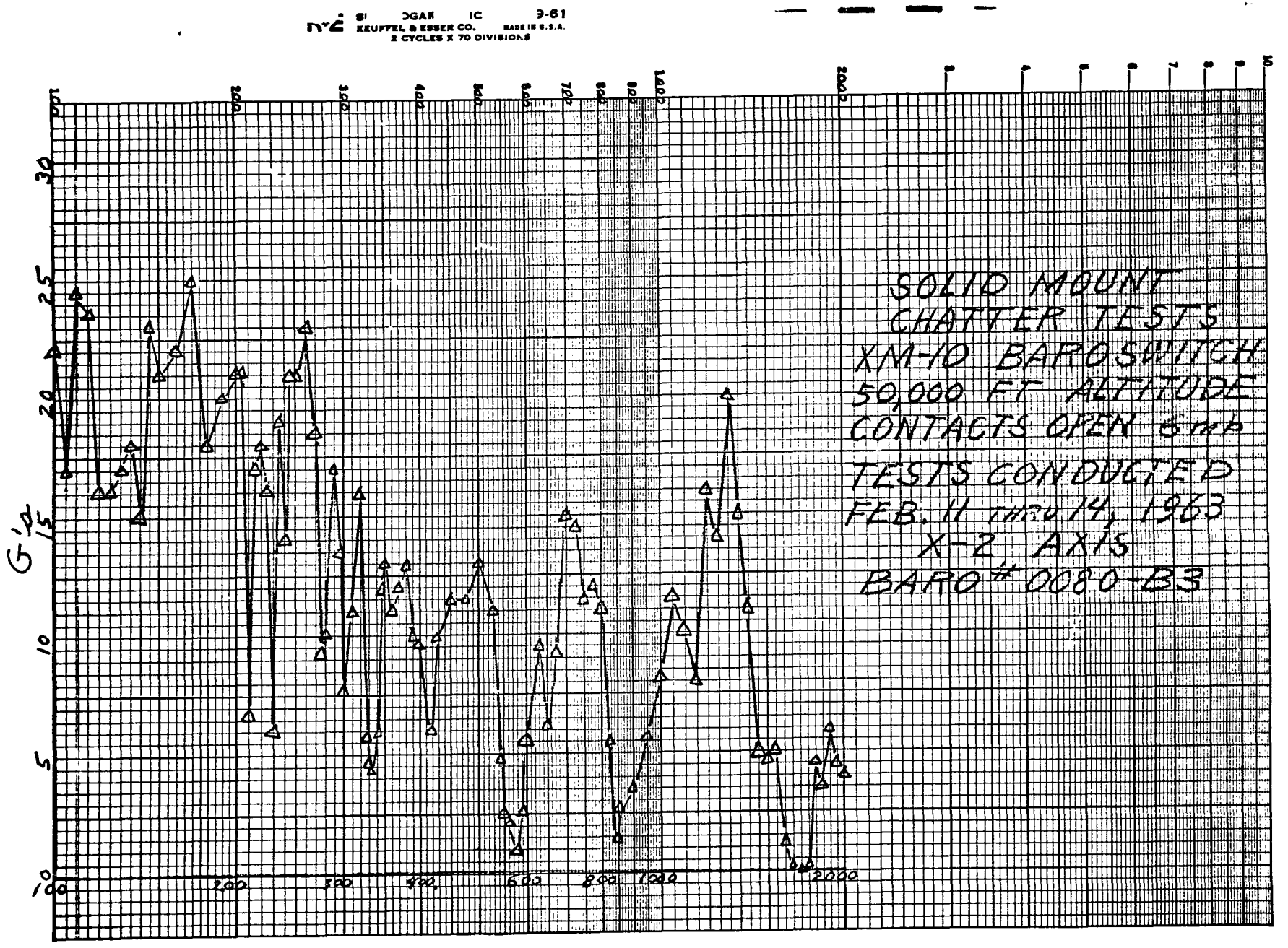


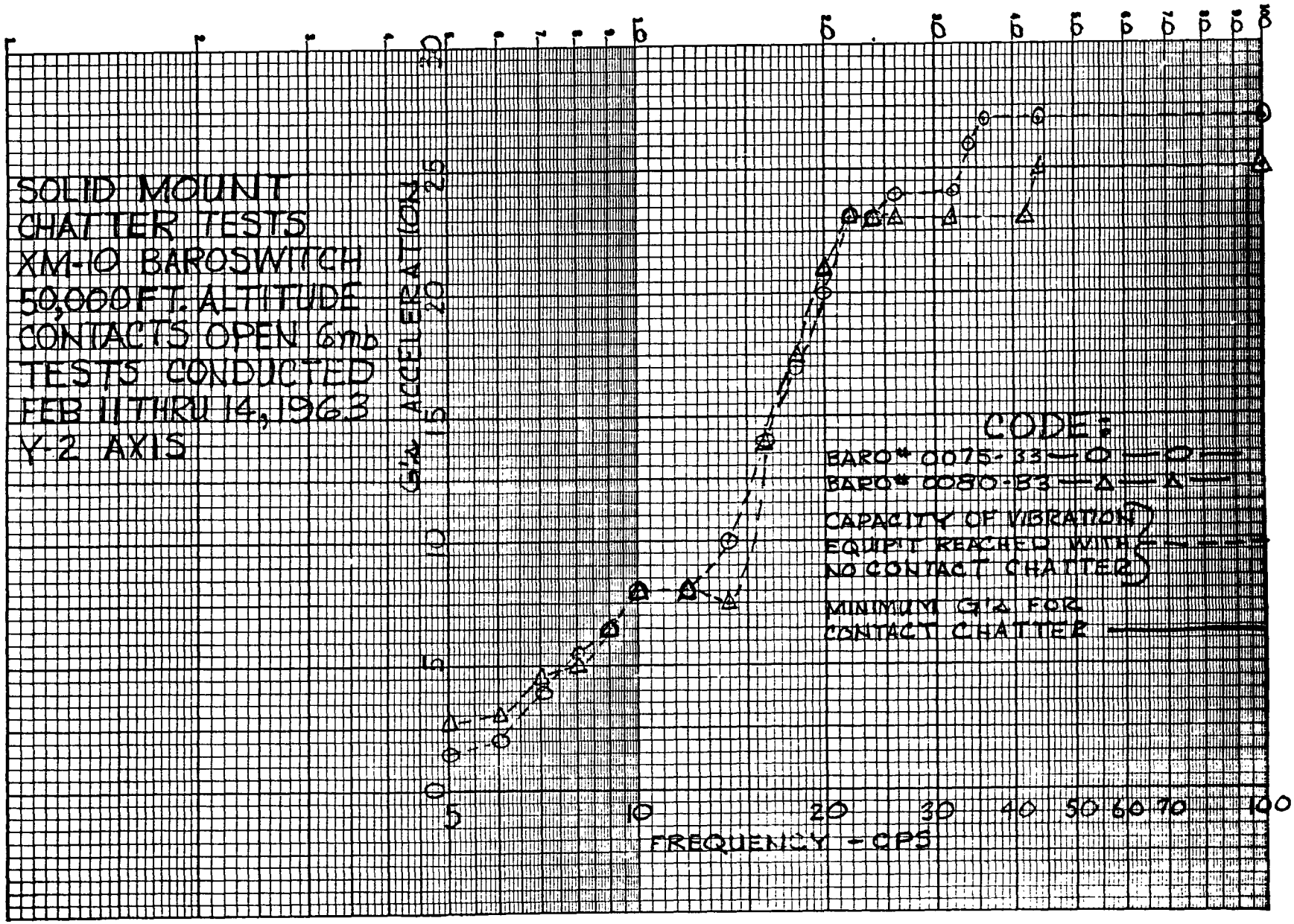
XM-10 BAROSWITCH

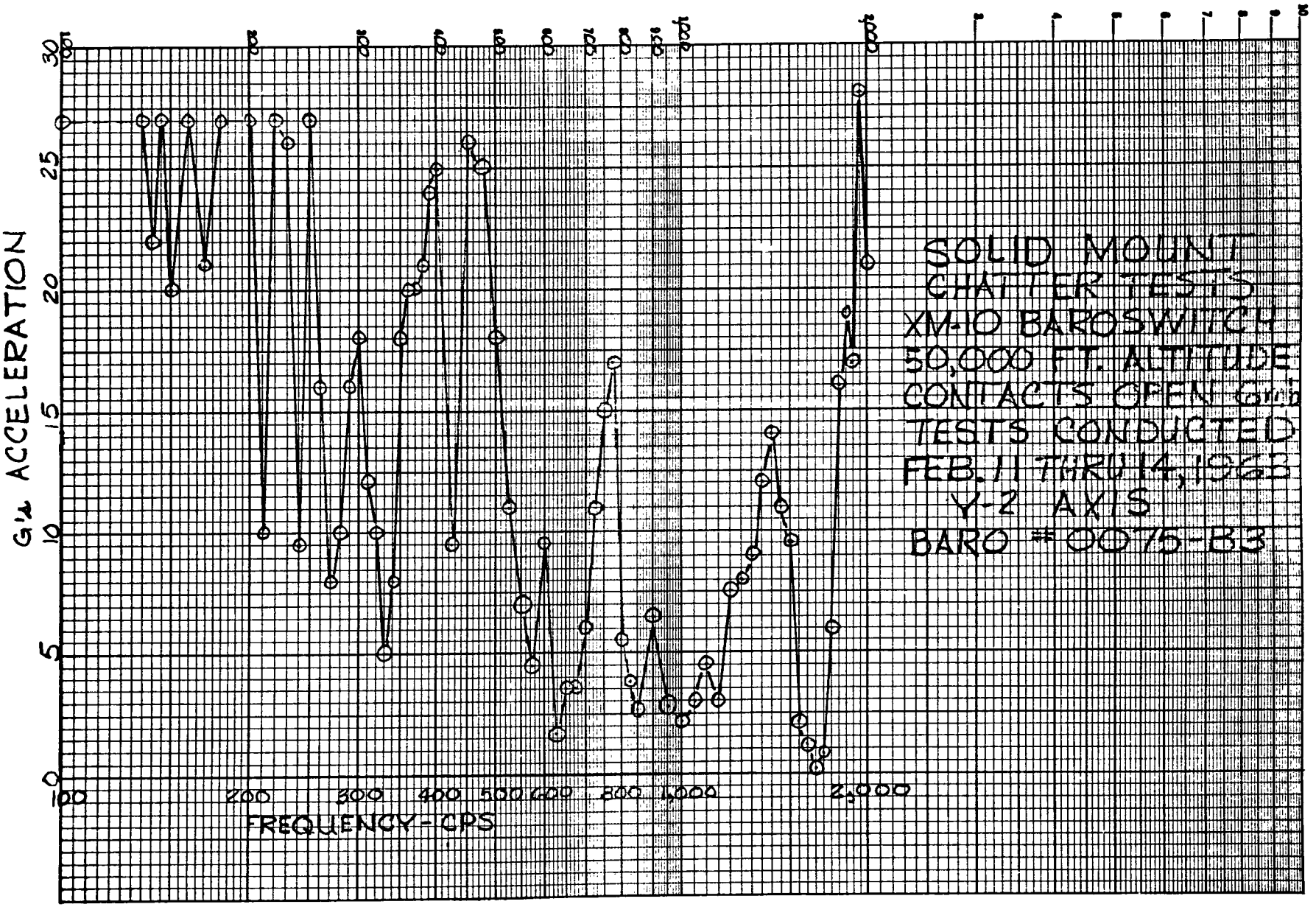
MOUNTED TO ORIENTING FIXTURE WITH ALUMINUM SIDE PLATES

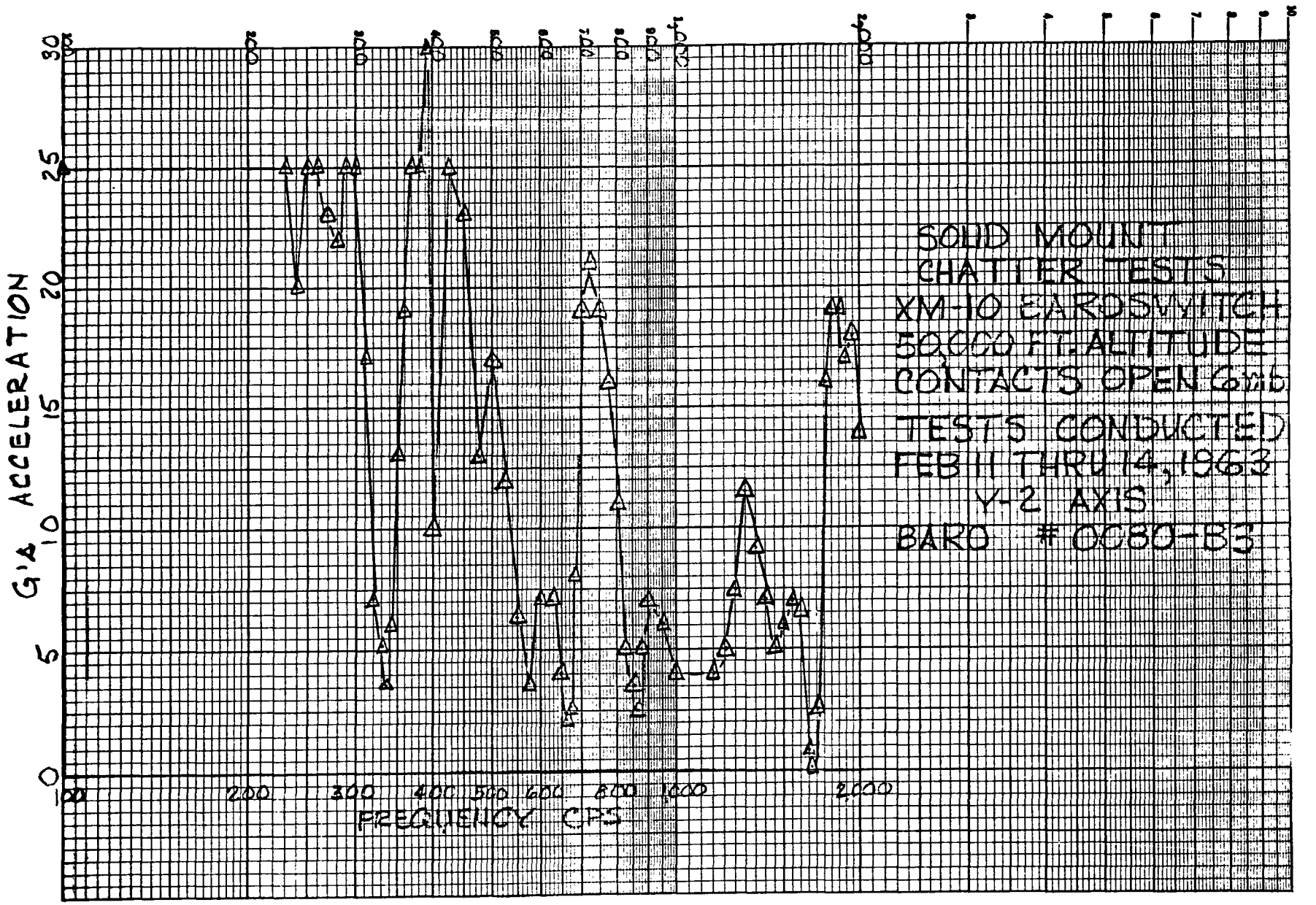

K&E SEMI-LOGARITHMIC 359-61
KEUFFEL & ESSER CO. MADE IN U.S.A.
2 CYCLES X 70 DIVISIONS
SOLID MOUNT
CHATTER TESTS
XM-10 BAROSWITCH
50,000 FT ALTITUDE
CONTACTS OPEN 6mm
TESTS CONDUCTED
FEB. 11 THRU 19, 1963
X-2 AXIS
X=2
Y=2
Z=1
CODE:
BARO # 0075-83
BARO # 0080-83
CAPACITY OF VIBRATION EQUIPT REACHED WITH NO CONTACT CHATTER
MINIMUM G'S FOR CONTACT CHATTER
FREQUENCY - CPS

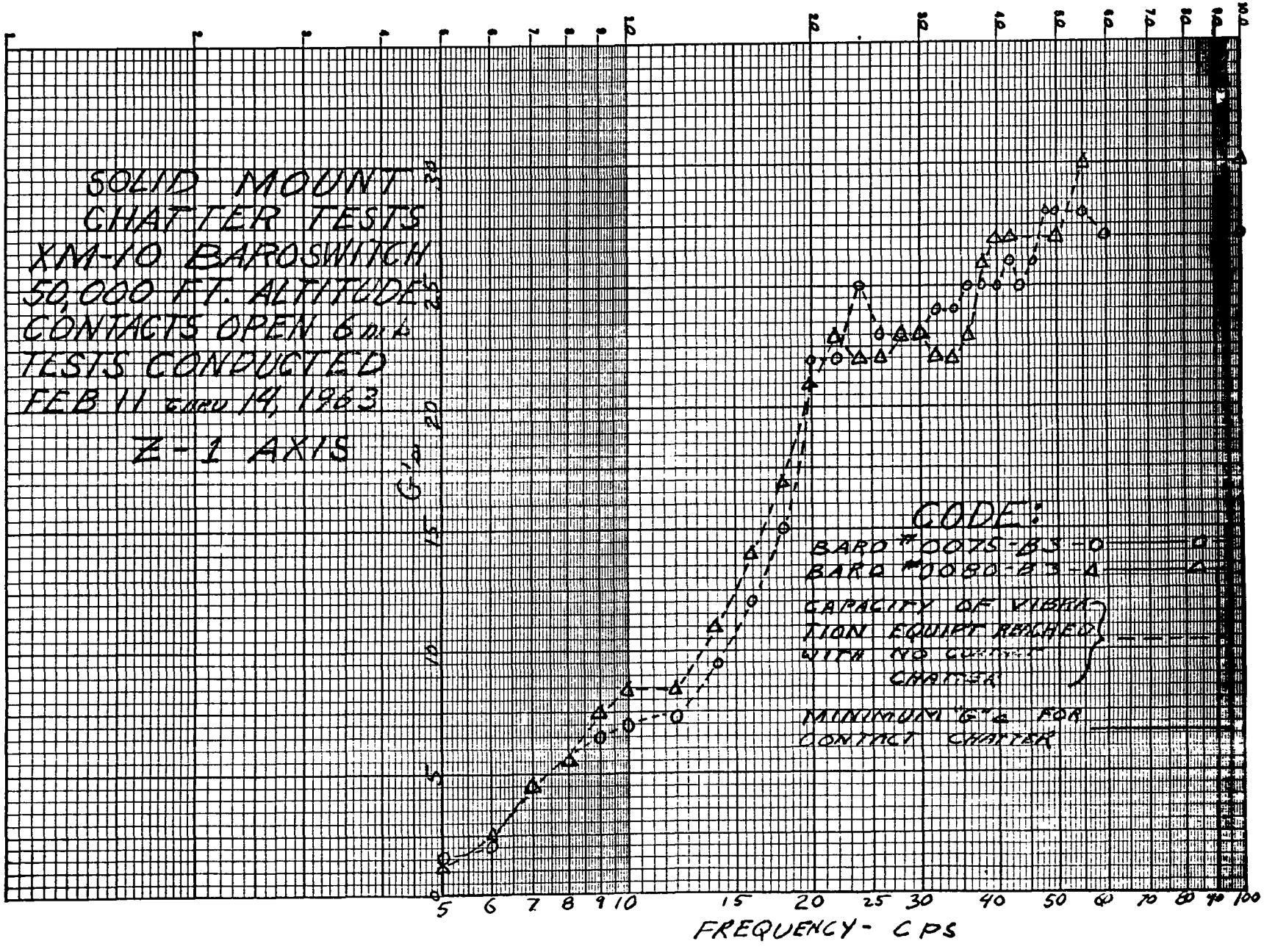

K•E SEMI-LOGARITHMIC 359-61
KEUFFEL & ESSER CO. MADE IN U.S.A.
2 CYCLES X 70 DIVISIONS
SOLID MOUNT
CHATTER TESTS
XM-10 BARO SWITCH
50,000 FT ALTITUDE
CONTACTS OPEN 6MS
TESTS CONDUCTED
FEB. 11 THRU 14, 1963
X-2 AXIS —
BARO #0075-63
G's
FREQUENCY - CPS
100
200
300
400
600
800
1000
2000
5
10
15
20
25
30

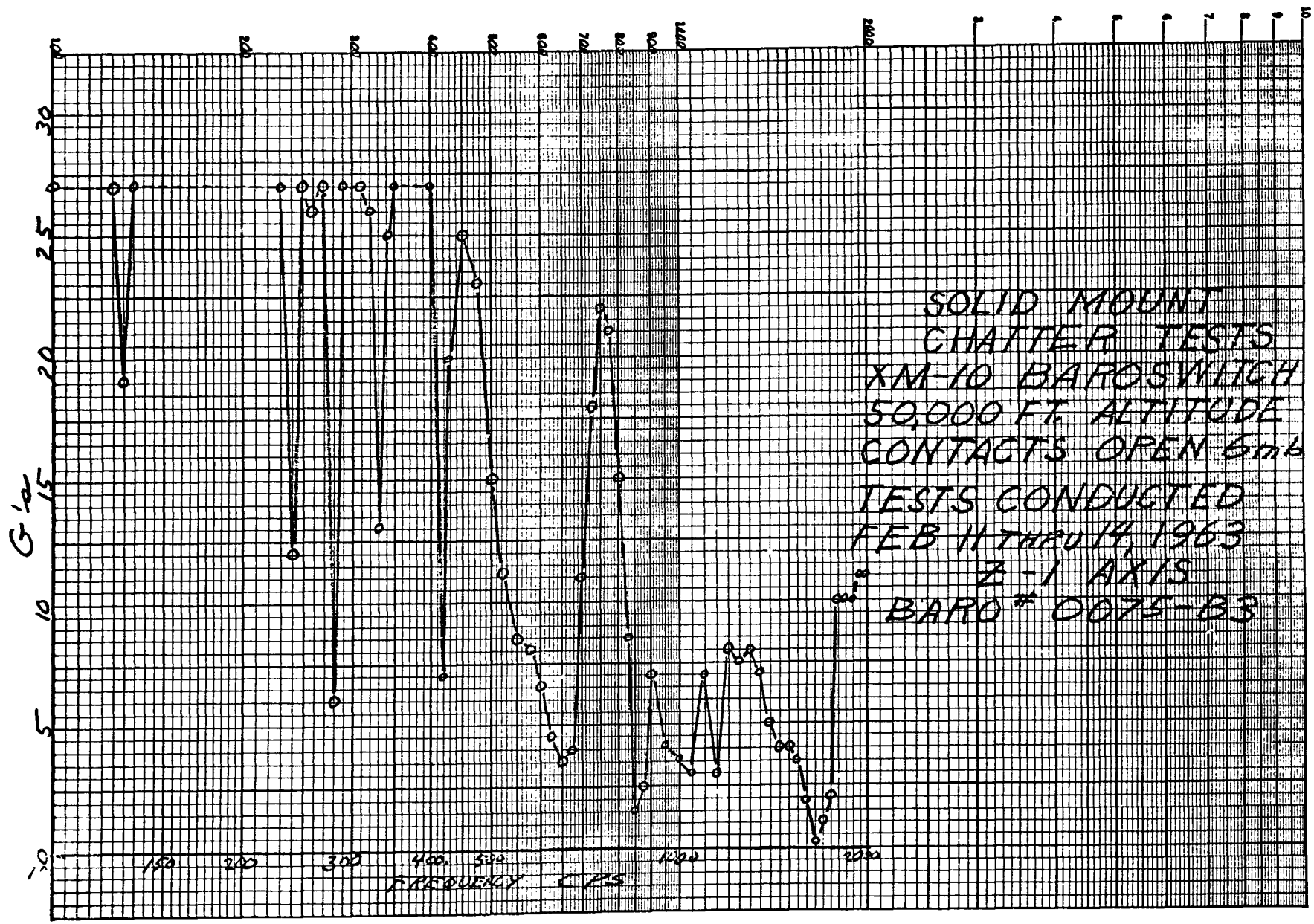

SOLID MOUNT
CHATTER TESTS
XM-10 BAROSWITCH
50,000 FT ALTITUDE
CONTACTS OPEN 5 m/s
TESTS CONDUCTED
FEB. 11 THRU 14, 1963
X-2 AXIS
BARO # 0080-B3
G's
KEUFFEL & ESSER CO.
2 CYCLES X 70 DIVISIONS


KEUFFEL & ESSER CO. MADE IN U.S.A.
2 CYCLES X 70 DIVISIONS
SOLID MOUNT
CHATTER TESTS
XM-10 BAROSWITCH
50,000FT. ALTITUDE
CONTACTS OPEN 6mb
TESTS CONDUCTED
FEB 11 THRU 14, 1963
Y2 AXIS
G'S ACCELERATION
FREQUENCY - CPS
CODE:
BARO* 0075-33 —O— —O—
BARO* 0080-33 —Δ— —Δ—
CAPACITY OF VIBRATION EQUIPT REACHED WITH NO CONTACT CHATTER
MINIMUM G'S FOR CONTACT CHATTER

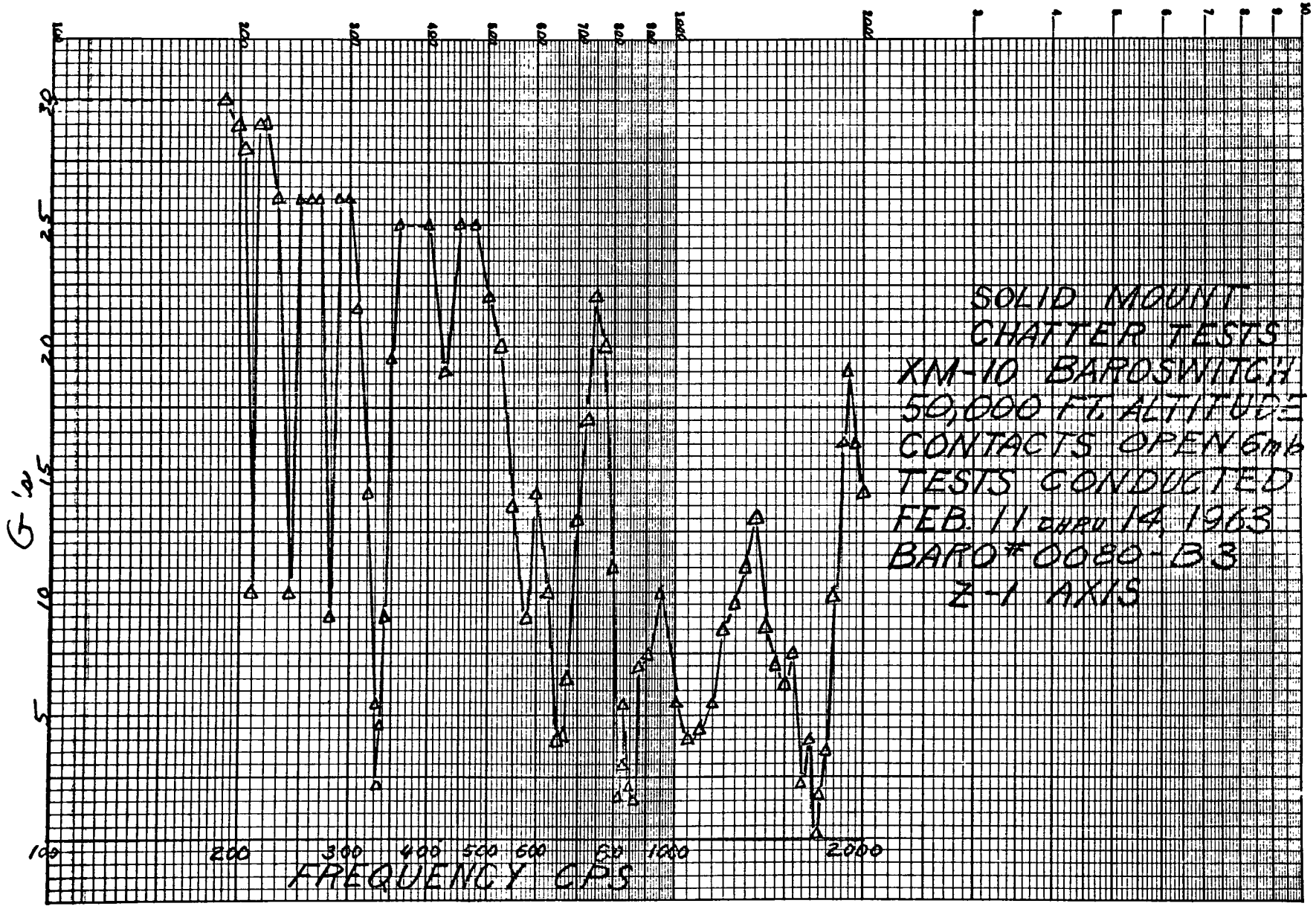

K•E SEMI-LOGARITHMIC 359-61
KEUFFEL & ESSER CO. MADE IN U.S.A.
2 CYCLES X 70 DIVISIONS
G's ACCELERATION
FREQUENCY-CPS
100
200
300
400
500
600
800
1,000
2,000
0
5
10
15
20
25
30
SOLID MOUNT
CHATTER TEST
XM-10 BAROSWITCH
50,000 FT. ALTITUDE
CONTACTS OPEN 6m/s
TESTS CONDUCTED
FEB. 11 THRU 14, 1963
Y-2 AXIS
BARO # 0075-B3


K+E SEMI-LOGARITHMIC 359-61
KEUFFEL & ESSER CO. MADE IN U.S.A.
2 CYCLES X 70 DIVISIONS
G'S ACCELERATION
FREQUENCY CPS
100
200
300
400
500
600
800
1000
2,000
0
5
10
15
20
25
30
SOLID MOUNT
CHATTER TESTS
XM-10 CARDSWITCH
50,000 FT. ALTITUDE
CONTACTS OPEN G'S
TESTS CONDUCTED
FEB 11 THRU 14, 1963
Y-2 AXIS
BARO # OCBO-B3


K&E SEMI-LOGARITHMIC 359-61
KEUFFEL & ESSER CO. MADE IN U.S.A.
2 CYCLES X 70 DIVISIONS
SOLID MOUNT
CHATTER TESTS
XM-10 BAROSWITCH
50,000 FT. ALTITUDE
CONTACTS OPEN 6 m/s
TESTS CONDUCTED
FEB 11 thru 14, 1963
Z-1 AXIS
G's
FREQUENCY - CPS
CODE:
BARD #0075-B3-0
BARD #0080-B3-A
CAPACITY OF VIBRATION EQUIPT REACHED WITH NO CONTACT CHATTER
MINIMUM "G" FOR CONTACT CHATTER


KEUFFEL & ESSER CO.
2 CYCLES X 70 DIVISIONS
SOLID MOUNT
CHATTER TESTS
XM-10 BAROSWITCH
50,000 FT. ALTITUDE
CONTACTS OPEN 6m/s
TESTS CONDUCTED
FEB 11 THRU 14, 1963
Z-1 AXIS
BARO # 0075-63
G's
FREQUENCY CPS
150
200
300
400
500
1000
2000

K&E SEMI-LOGARITHMIC 359-61
KEUFFEL & ESSER CO. MADE IN U.S.A.
2 CYCLES X 70 DIVISIONS



File Ref: 32-0376-7
Contract No.: DA-36-034-ORD-2890A

APPENDIX "B"

VIBRATION TEST ON XM-10 BAROSWITCHES USING .125" EXCURSION LORD MOUNTS

INTRODUCTION:

This report is submitted to Picatinny Arsenal to provide information on recently conducted vibration tests on the XM-10 Baroswitch, utilizing Lord mounts with a .125" excursion. Data is presented in tables and graphic form, and a summary analysis of the data is included.

TEST EQUIPMENT AND PROCEDURES:

The XM-10 baroswitches used in this test, Serial Nos. 0075-B3 and 0080-B3, were of the latest design, with platinum-tungsten crossed-wire contacts. These baroswitches were used in the previously reported solid-mount contact chatter tests. The mounts were experimental units from Lord Manufacturing, utilizing an elastomer which permitted a .125" excursion in the X axis at mount resonance during 4 "G" testing.

A set of mounts was placed on each baroswitch and these were used throughout testing.

Testing was started on 3-8-63 and completed on 3-15-63. A synopsis of the testing procedure is as follows:

A. Vibration Inputs:

5-15-5 cps at 0.35" D.A. constant

15-2000-15 cps at 4g's constant

B. Sweep Times:

Four minutes, 10 minutes (each sweep time encompassing both inputs).

C. Altitudes:

10,216 ft. (3114 meters) (691 mb)

20,187 ft. (6153 meters) (462 mb)

49,995 ft. (15,238 meters) (116 mb)

D. Orientations:

X-2 Axis, Y-2 Axis, Z-1 Axis (stated axis pointed upward - see Figure 1)

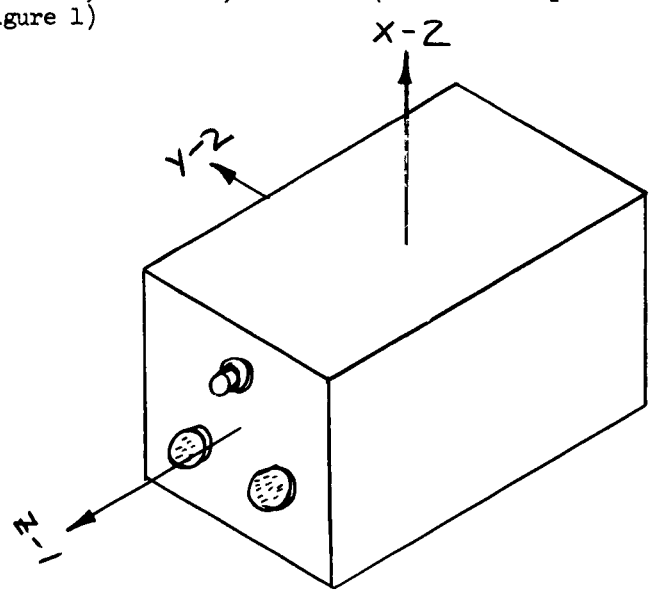


Figure 1

E. Contact Setting:

Contacts were set open 6 mb, test was conducted. If necessary, contacts were opened in increments of 2 mb until contact closures during vibration were eliminated. Contacts were set closed 6 mb, test conducted.

F. Sequence followed during Vibration Testing.

Test No.	Unit No.	Axis	Sweep Time	Altitude
1	0075-B3	X-2	4 Min.	10,216 Ft.
2	0075-B3	X-2	10 Min.	10,216 Ft.
3	0075-B3	X-2	4 Min.	20,187 Ft.
4	0075-B3	X-2	10 Min.	20,187 Ft.
5	0075-B3	X-2	4 Min.	49,995 Ft.
6	0075-B3	X-2	10 Min.	49,995 Ft.
7	0080-B3	X-2	4 Min.	10,216 Ft.
8	0080-B3	X-2	10 Min.	10,216 Ft.
9	0080-B3	X-2	4 Min.	20,187 Ft.
10	0080-B3	X-2	10 Min.	20,187 Ft.
11	0080-B3	X-2	4 Min.	49,995 Ft.
12	0080-B3	X-2	10 Min.	49,995 Ft.
13	0080-B3	Z-1	4 Min.	10,216 Ft.
14	0080-B3	Z-1	10 Min.	10,216 Ft.
15	0080-B3	Z-1	4 Min.	20,187 Ft.
16	0080-B3	Z-1	10 Min.	20,187 Ft.
17	0080-B3	Z-1	4 Min.	49,995 Ft.
18	0080-B3	Z-1	10 Min.	49,995 Ft.
19	0075-B3	Z-1	4 Min.	10,216 Ft.
20	0075-B3	Z-1	10 Min.	10,216 Ft.
21	0075-B3	Z-1	4 Min.	20,187 Ft.
22	0075-B3	Z-1	10 Min.	20,187 Ft.
23	0075-B3	Z-1	4 Min.	49,995 Ft.
24	0075-B3	Z-1	10 Min.	49,995 Ft.
25	0075-B3	Y-2	4 Min.	10,216 Ft.
26	0075-B3	Y-2	10 Min.	10,216 Ft.
27	0075-B3	Y-2	4 Min.	20,187 Ft.
28	0075-B3	Y-2	10 Min.	20,187 Ft.
29	0075-B3	Y-2	4 Min.	49,995 Ft.
30	0075-B3	Y-2	10 Min.	49,995 Ft.
31	0080-B3	Y-2	4 Min.	10,216 Ft.
32	0080-B3	Y-2	10 Min.	10,216 Ft.

Test No.	Unit No.	Axis	Sweep Time	Altitude
33	0080-B3	Y-2	4 Min.	20,187 Ft.
34	0080-B3	Y-2	10 Min.	20,187 Ft.
35	0080-B3	Y-2	4 Min.	49,995 Ft.
36	0080-B3	Y-2	10 Min.	49,995 Ft.

G. Readout Equipment:

A 28 VDC, 50 micro-ampere load was impressed across each contact. Contact closures were monitored with oscilloscopes. No provision for filtering contact closures of 50 microseconds or less duration was included in the test setup.

H. Mount Transmissibility:

Transmissibility tests were made prior to contact chatter testing in the specified axes.

RESULTS:

Attachment No. 1 presents contact chatter data in tabular form. Descriptive symbols used are defined below:

NC = No contact chatter

Hold -6 = Holding contacts open by 6 mb

Hold +6 = Holding contacts closed by 6 mb

60-75, etc. = Constant or near constant chatter from 60 to 75 cps

65,1700, etc. = Isolated chatter at these points

Set Point = Actual pressure reading where contacts indicate closure

Graphs plotting contact chatter vs. frequency for each test are attached.

Mount Transmissibility information is tabulated in Attachment No. 2. Graphs of transmissibility vs. frequency are attached.

Mount transmissibility and excursion envelopes by the V-scope method at the resonant frequencies are tabulated below:

X-2 Axis	Resonant Freq.	Mount Trans.	Excursion Envelope
0075-B3	60 cps	5.75:1	0.125"
0080-B3	63.5 cps	5.75:1	0.125"
Y-2 Axis			
0075-B3	145 cps	7.5:1	-
0080-B3	140 cps	8.25:1	-
Z-1 Axis			
0075-B3	63 cps	6.13:1	0.109"
0080-B3	60 cps	5.65:1	0.109"

Excursions during Y-axis testing were too small to be read on the V-scope.

DISCUSSION AND CONCLUSIONS:

A comparison of this test program and tests reported in Progress Reports Nos. 19 and 20, using Lord mounts with .093" excursion shows that in most direct comparisons between the two test programs, the .125" excursion mounts required less contact aperture to eliminate chatter than did the .093" excursion mounts. However, the peak transmissibility showed an increase for the .125" excursion mounts, as shown below:

PEAK TRANSMISSIBILITIES

	X-Axis	Y-Axis	Z-Axis
.093" Elastomer	3.12:1 (110 cps)	7.5:1 (190 cps)	2.85:1 (100 cps)
.125" Elastomer	5.75:1 (63.5 cps)	8.25:1 (140 cps)	5.65:1 (60 cps)

The absence of contact chatter in the Z-1 Axis for the .125" Elastomer is worth noting.

ATTACHMENT NO. 1

Test No. 1
Unit No. 0075-B3
Axis (X-2) Mount Resonance 60 cps
Transmissibility 5.75:1 - Sweep 4 Min.
4 G's Const. - 10,216 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694.5	697	694	694.5
Hold	-6.5	-9.0	-6.0	-6.5
5-2000	1700	NC	NC	65
2000-5	70	NC	NC	70,60
Hold	-8.5	-11.0	-8.0	-8.5
5-2000	NC	NC	NC	70
2000-5	NC	NC	NC	NC
Hold	-10.5	-13.0	-10.0	-10.5
5-2000	NC	NC	NC	NC
2000-5	NC	NC	NC	NC

Test No. 7
Unit No. 0080-B3
Axis (X-2) Mount Resonance 63.5 cps
Transmissibility 5.75:1 - Sweep 4 Min.
4 G's Const. - 10,216 Ft. Alt.

	Ele.#1	Ele.#2	Ele.#3	Ele.#4
	694	692	694	694
	-8.0	-6.0	-8.0	-8.0
	55-70	55-70	55-70	53-70
	70-55	70-55	70-55	70-55
	-10.0	-8.0	-10.0	-10.0
	55-70	55-70	55-70	50,55-70
	70-55	70-55	70-55	70-55
	-12.0	-10.0	-12.0	-12.0
	55-70	55-70	55-70	55-70
	70-55	NC	70-55	70-55
Hold	-14.0	-12.0	-14.0	-14.0
5-2000	NC	NC	NC	55,65-70
2000-5	57	NC	NC	57
Hold	-16.0	-14.0	-16.0	-16.0
5-2000-5	NC	NC	NC	NC

Test No. 1 (continued)

(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694	696	693	693.5
Hold	+8.0	+6.0	+9.0	+8.5
5-2000-5	NC	NC	NC	NC

Test No. 2
Unit No. 0075-B3
Axis (X-2) - Sweep 10 min.
4 G's Const. 10,216 Ft. Alt.

OPEN	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694	696	693	693.5
Hold	-7.0	-9.0	-6.0	-6.5
5-2000	60,1700	NC	NC	60
2000-5	NC	NC	NC	65
Hold	-9.0	-11.0	-8.0	-8.5
5-2000	NC	NC	NC	NC
2000-5	NC	NC	NC	NC

Test No. 7 (continued)

	Ele.#1	Ele.#2	Ele.#3	Ele.#4
	694	692	694	694
	+6.0	+8.0	+6.0	+6.0
	NC	NC	NC	NC

Test No. 8
Unit No. 0080-B3
Axis (X-2) - Sweep 10 min.
4 G's Const. 10,216 Ft. Alt.

	Ele.#1	Ele.#2	Ele.#3	Ele.#4
	694	692	694	694
	-8.0	-6.0	-8.0	-8.0
	55-72	65	65	50-72
	70-54	70-60	70-60	70-54
	-10.0	-8.0	-10.0	-10.0
	52-70	52-70	52-70	52-70
	72-55	70-55	70-55	70-55
Hold	-12.0	-10.0	-12.0	-12.0
5-2000	55-72	55-65	55-65	55-72
2000-5	72-55	72-55	72-55	72-55
Hold	-14.0	-12.0	-14.0	-14.0
5-2000	55-70	65	65	55-70

Test No. 2 (continued)

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4

Test No. 8 (continued)

	Ele.#1	Ele.#2	Ele.#3	Ele.#4
2000-5	70-65	65	65	70-57
Hold	-16.0	-14.0	-16.0	-16.0
5-2000	NC	NC	NC	55-70
2000-5	NC	NC	NC	57
Hold	-18.0	-16.0	-18.0	-18.0
5-2000	NC	NC	NC	57,65,70
2000-5	NC	NC	NC	65,57
Hold	-20.0	-18.0	-20.0	-20.0
5-2000-5	NC	NC	NC	NC

(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	693	695	692.5	693.5	694	692	694	694
Hold	+8.0	+6.0	+8.5	+7.5	+6.0	+8.0	+6.0	+6.0
5-2000-5	NC	NC	NC	NC	NC	NC	NC	NC

Test No. 3
Unit No. 0075-B3
Axis (X-2) - Sweep 4 Min.
4 G's Const. 20,187 Ft. Alt.

Test No. 9
Unit No. 0080-B3
Axis (X-2) - Sweep 4 Min.
4 G's Const. 20,187 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459	458	460	458.5	460	457	459.5	459
Hold	-7.0	-6.0	-8.0	-6.5	-9.0	-6.0	-8.5	-8.0

	Test No. 3 (continued)				Test No. 9 (continued)			
(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4	Ele.#1	Ele.#2	Ele.#3	Ele.#4
5-2000	NC	NC	NC	60,65	54-70	54-70	54-70	54-70
2000-5	NC	NC	NC	70-60	70-60	70-60	70-60	75-54
Hold	-9.0	-8.0	-10.0	-8.5	-11.0	-8.0	-10.5	-10.0
5-2000	NC	NC	NC	NC	55-65	55-65	55-65	55-65
2000-5	NC	NC	NC	65	70-52	70-52	70-52	70-52
Set Check	459	458	460	458	460	457	459.5	459
Hold	-11.0	-10.0	-12.0	-10.0	-13.0	-10.0	-12.5	-12.0
5-2000	NC	NC	NC	NC	NC	NC	57-65	NC
2000-5	NC	NC	NC	NC	70	NC	70-65	70-65
				Hold	-15.0	-12.0	-14.5	-14.0
				5-2000	NC	NC	65	NC
				2000-5	NC	NC	65-60	NC
				Hold	-17.0	-14.0	-16.5	-16.0
				5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459	458	460	458	460	457	459.5	459
Hold	+7.0	+8.0	+6.0	+8.0	+5.5	+8.5	+6.0	+6.5
5-2000-5	NC	NC	NC	NC	NC	NC	NC	NC

Test No. 4
Unit No. 0075-B3
Axis (X-2) - Sweep 10 Min.
4 G's Const. 20,187 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459	458	460	458
Hold	-7.0	-6.0	-8.0	-6.0
5-2000	NC	60-70 1700	NC	55 60-72
2000-5	NC	1700 70-60	65	72-56
Hold	-9.0	-8.0	-10.0	-8.0
5-2000	NC	NC	NC	55,61,65
2000-5	NC	NC	NC	70,68
Hold	-11.0	-10.0	-12.0	-10.0
5-2000	NC	NC	NC	56
2000-5	NC	NC	NC	NC
Hold	-13.0	-12.0	-14.0	-12.0
5-2000	NC	NC	NC	NC
2000-5	NC	NC	NC	NC

Test No. 10
Unit No. 0080-B3
Axis (X-2) - Sweep 10 Min.
4 G's Const. 20,187 Ft. Alt.

	Ele.#1	Ele.#2	Ele.#3	Ele.#4
	460.5	457	459.5	458.5
	-9.5	-6.0	-8.5	-7.5
	56-73	56-73	56-73	56-73
	70-58	70-58	70-58	70-58
	-11.5	-8.0	-10.5	-9.5
	58-67	56-67	56-72	56-72
	72-65	72-65	72-65	72-65
	-13.5	-10.0	-12.5	-11.5
	56-68	56-68	56-68	56-68
	NC	NC	68-55	68-55
	-15.5	-12.0	-14.5	-13.5
	NC	NC	58-67	58-67
	NC	NC	58	68-60
Hold	-17.5	-14.0	-14.5	-13.5
5-2000	NC	NC	68	NC
2000-5	NC	NC	58	NC

Test No. 4 (continued)

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459	458	460	458
Hold	+7.0	+8.0	+6.0	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 10 (continued)

	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Hold	-19.5	-16.0	-16.5	-15.5
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	460.5	457	459.5	458.5
Hold	+6.0	+9.0	+7.0	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 5
Unit No. 0075-B3
Axis (X-2) - Sweep 4 Min.
4 G's Const. 49,995 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	118	118	114.5	116.5
Hold	-7.5	-7.5	-4.0	-6.0
5-2000	NC	63-65	58,63-65 1700	63-65
2000-5	70-58	70-58	1700 70-58	70-58
Hold	-10.0	-10.0	-6.5	-8.5
5-2000	60-70	60-70	60-70	60-70
2000-5	70-65	70-65	70-65	70-65
Hold	-12.0	-12.0	-8.5	-10.5

Test No. 11
Unit No. 0080-B3
Axis (X-2) - Sweep 4 Min.
4 G's Const. 49,995 Ft. Alt.

	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	120	113	118	115
Hold	-13.0	-6.0	-11.0	-8.0
5-2000	NC	60	NC	NC
2000-5	65-60	65-60	65-60	65-60
Hold	-15.0	-8.0	-13.0	-10.0
5-2000	60-65	60-65	60-65	60-65
2000-5	60	NC	60	NC
Hold	-17.0	-10.0	-15.0	-12.0

Test No. 5 (continued)

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
5-2000	NC	NC	68	NC
2000-5	65	NC	65	NC
Hold	-14.0	-14.0	-10.5	-12.5
5-2000	NC	NC	NC	NC
2000-5	NC	NC	NC	NC

(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	118	118	115.5	117.5
Hold	+6.0	+6.0	+8.5	+6.5
5-2000-5	NC	NC	NC	NC

Test No. 6
Unit No. 0075-B3
Axis (X-2) - Sweep 10 Min.
4 G's Const. 49,995 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	118.5	118	115.5	118
Hold	-6.5	-6.0	-3.5	-6.0
5-2000	57-72	57-72	57-72 1700	57-72

Test No. 11 (continued)

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
5-2000	60	NC	60	NC
2000-5	NC	NC	NC	NC
Hold	-19.0	-12.0	-17.0	-14.0
5-2000	60	NC	60	NC
2000-5	NC	NC	NC	NC
Hold	-21.0	-14.0	-19.0	-16.0
5-2000-5	NC	NC	NC	NC

(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	120	113	118	115
Hold	+6.0	+13.0	+8.0	+11.0
5-2000-5	NC	NC	NC	NC

Test No. 12
Unit No. 0080-B3
Axis (X-2) - Sweep 10 Min.
4 G's Const. 49,995 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	120	113	118	115
Hold	-13.0	-6.0	-11.0	-8.0
5-2000	60-65	60-65	60-65	60-65

	Test No. 6 (continued)				Test No. 12 (continued)			
(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4	Ele.#1	Ele.#2	Ele.#3	Ele.#4
2000-5	70-55	70-52	75,70-55	70-55	65-60	NC	65-60	NC
Set Check	118.5	118	116	118	120	113	118	115
Hold	-8.5	-8.0	-6.0	-8.0	-15.0	-8.0	-13.0	-10.0
5-2000	65	60-75	60-75	60-75	60-65	60-65	60-65	60-65
2000-5	70-57	70-57	75	70-57	NC	NC	63	NC
Hold	-10.5	-10.0	-8.0	-10.0	-17.0	-10.0	-15.0	-12.0
5-2000	57	NC	60-65	NC	60-63	NC	63	60-63
2000-5	68	NC	60	NC	NC	NC	63	NC
Hold	-12.5	-12.0	-10.0	-12.0	-19.0	-12.0	-17.0	-14.0
5-2000	65	NC	60	NC	NC	NC	60	NC
2000-5	57	NC	60	NC	NC	NC	NC	NC
Hold	-14.5	-14.0	-12.0	-14.0	-21.0	-14.0	-19.0	-16.0
5-2000	65	NC	60,65	NC	NC	NC	NC	NC
2000-5	NC	NC	64	NC	NC	NC	NC	NC
Hold	-16.5	-16.0	-14.0	-16.0				
5-2000	65	NC	60	NC				
2000-5	NC	NC	NC	NC				
Hold	-18.5	-18.0	-16.0	-18.0				
5-2000-5	NC	NC	NC	NC				

Test No. 6 (continued)

(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	118.5	118	115.5	118
Hold	+6.0	+6.5	+9.0	+6.5
5-2000-5	NC	NC	NC	NC

Test No. 12 (continued)

Ele.#1	Ele.#2	Ele.#3	Ele.#4
120	113	118	115
+6.0	+13.0	+8.0	+11.0
NC	NC	NC	NC

Test No. 25
Unit No. 0075-B3
Axis (Y-2) Mount Resonance 145 cps
Transmissibility 7.5:1 - Sweep 4 Min.
4 G's Const. 10,216 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	695.5	698	695	694
Hold	-7.5	-10.0	-7.0	-6.0
5-2000	140	140	140 1700	140
2000-5	130	130	1700 130	130
Hold	-9.5	-12.0	-9.0	-8.0
5-2000	NC	NC	NC	NC
2000-5	NC	NC	NC	NC

Test No. 31
Unit No. 0080-B3
Axis (Y-2) Mount Resonance 140 cps
Transmissibility 8.25:1 - Sweep 4 Min.
4 G's Const. 10,216 Ft. Alt.

Ele.#1	Ele.#2	Ele.#3	Ele.#4
694	691.5	692	693.5
-8.5	-6.0	-6.5	-8.0
140	NC	140	140
NC	NC	NC	NC
-10.5	-8.0	-8.5	-10.0
140	NC	140	140
NC	NC	NC	NC
-12.5	-10.0	-10.5	-12.0
NC	NC	140	NC
NC	NC	NC	NC

Test No. 25 (continued)

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
				Hold
				5-2000
				2000-5
				Hold
				5-2000
				2000-5
				Hold
				5-2000-5

(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	695.5	698	695	694
Hold	+8.5	+6.0	+9.0	+10.0
5-2000-5	NC	NC	NC	NC

Test No. 31 (continued)

Ele.#1	Ele.#2	Ele.#3	Ele.#4
-14.5	-12.0	-12.5	-14.0
NC	NC	140	NC
NC	NC	NC	NC
-16.5	-14.0	-14.5	-16.0
NC	NC	140	NC
NC	NC	NC	NC
-18.5	-16.0	-16.5	-18.0
NC	NC	NC	NC

Ele.#1	Ele.#2	Ele.#3	Ele.#4
694	691.5	692	693.5
+6.0	+8.5	+8.0	+6.5
NC	NC	NC	NC

Test No. 26
Unit No. 0075-B3
Axis (Y-2) - Sweep 10 Min.
4 G's Const. 10,216 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694	696	692	692
Hold	-8.0	-10.0	-6.0	-6.0
5-2000	NC	NC	120-140	120-140 1700

Test No. 32
Unit No. 0080-B3
Axis (Y-2) - Sweep 10 Min.
4 G's Const. 10,216 Ft. Alt.

Ele.#1	Ele.#2	Ele.#3	Ele.#4
694	691.5	692	693.5
-8.5	-6.0	-6.5	-8.0
NC	NC	140-145	140-145

	Test No. 26 (continued)				Test No. 32 (continued)			
(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4	Ele.#1	Ele.#2	Ele.#3	Ele.#4
2000-5	NC	NC	140-130	1700 140-130	NC	NC	140	140
Hold	-10.0	-12.0	-8.0	-8.0	-10.5	-8.0	-8.5	-10.0
5-2000	135-140	135-140	135-140	135-140	NC	NC	140-145	140-145
2000-5	140-130	NC	140-130	1700 140-130	NC	NC	140	140
Set Check	692	695	691.5	690.5	694	691.5	692	693.5
Hold	-11.5	-14.5	-11.0	-12.0	-12.5	-10.0	-10.5	-12.0
5-2000	NC	NC	135	140	NC	NC	140	NC
2000-5	NC	NC	NC	135	NC	NC	140	140
Hold	-13.5	-16.5	-13.0	-14.0	-14.5	-12.0	-12.5	-14.0
5-2000	NC	NC	NC	140	NC	NC	NC	140
2000-5	NC	NC	NC	140	NC	NC	140	NC
Hold	-15.5	-18.5	-15.0	-16.0	-16.5	-14.0	-14.5	-16.0
5-2000	NC	NC	NC	NC	NC	NC	140	140
2000-5	NC	NC	NC	NC	NC	NC	140	140
				Hold	-18.5	-16.0	-16.5	-18.0
				5-2000	NC	NC	NC	NC
				2000-5	NC	NC	140	NC

Test No. 26 (continued)

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
				Hold
				5-2000-5
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	690	693	689.5	688
Hold	+9.0	+6.0	+9.5	+11.0
5-2000-5	NC	NC	NC	NC

Test No. 32 (continued)

Ele.#1	Ele.#2	Ele.#3	Ele.#4
-20.5	-18.0	-18.5	-20.0
NC	NC	NC	NC
Ele.#1	Ele.#2	Ele.#3	Ele.#4
694	691.5	692	693.5
+6.0	+8.5	+8.0	+6.5
NC	NC	NC	NC

Test No. 27
Unit No. 0075-B3
Axis (Y-2) - Sweep 4 Min.
4 G's Const. 20,187 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	460.5	460.5	462	460
Hold	-6.5	-6.5	-8.5	-6.0
5-2000	140	140	140	140
2000-5	130	130	130	130
Set Check	459.5	459.5	460.5	458.5
Hold	-9.0	-9.0	-10.0	-8.0
5-2000	NC	140	140	140
2000-5	NC	NC	NC	NC
Hold	-11.0	-11.0	-12.0	-10.0

Test No. 33
Unit No. 0080-B3
Axis (Y-2) - Sweep 4 Min.
4 G's Const. 20,187 Ft. Alt.

Ele.#1	Ele.#2	Ele.#3	Ele.#4
462	458.5	460	460
-9.5	-6.0	-7.5	-7.5
140	140	140	140
140	NC	NC	NC
462	458.5	460	460
-11.5	-8.0	-9.5	-9.5
140	NC	140	NC
NC	NC	NC	NC
-13.5	-10.0	-11.5	-11.5

Test No. 27 (continued)

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
5-2000	NC	140	NC	NC
2000-5	NC	NC	NC	130
Hold	-13.0	-13.0	-14.0	-12.0
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459.5	459.5	460.5	458.5
Hold	+7.0	+7.0	+6.0	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 28
Unit No. 0075-B3
Axis (Y-2) - Sweep 10 Min.
4 G's Const. 20,187 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459.5	459.5	460.5	458.5
Hold	-7.0	-7.0	-8.0	-6.0
5-2000	130	130	130 1700	130 1650
2000-5	140-130	120	140-130	1650 140-130
				Set Check

Test No. 33 (continued)

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
5-2000	NC	NC	140	140
2000-5	NC	NC	NC	NC
Hold	-15.5	-12.0	-13.5	-13.5
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	462	458.5	460	460
Hold	+6.0	+9.5	+8.0	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 34
Unit No. 0080-B3
Axis (Y-2) - Sweep 10 Min.
4 G's Const. 20,187 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	462	460	460	460
Hold	-8.0	-6.0	-6.0	-6.0
5-2000	140-170 1700	140-150	140-150 1700	140-150 1700
2000-5	1700 140	NC	1700 340 140	1700 140
	Set Check	460.5	458	460	460

	Test No. 28 (continued)				Test No. 34 (continued)			
(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Hold	-9.0	-9.0	-10.0	-8.0	-10.5	-8.0	-10.0	-10.0
5-2000	135-140	135-140	135-140	135-140	140	140	140	140
2000-5	NC	NC	135	130	140	NC	NC	140
Hold	-11.0	-11.0	-12.0	-10.0	-12.5	-10.0	-12.0	-12.0
5-2000	NC	140	NC	140	145	NC	NC	145
2000-5	NC	NC	NC	130	NC	NC	NC	145
Hold	-13.0	-13.0	-14.0	-12.0	-14.5	-12.0	-14.0	-14.0
5-2000	NC	135	135	135	NC	NC	NC	NC
2000-5	NC	NC	135	135	NC	NC	NC	NC
Hold	-15.0	-15.0	-16.0	-14.0				
5-2000	NC	135	135	NC				
2000-5	NC	NC	NC	NC				
Hold	-17.0	-17.0	-18.0	-16.0				
5-2000	NC	NC	NC	NC				
2000-5	NC	NC	NC	NC				
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	458.5	456.5	457	456	460.5	458	460	460
Hold	+6.0	+8.0	+7.5	+8.5	+6.0	+8.5	+6.5	+6.5
5-2000-5	NC	NC	NC	NC	NC	NC	NC	NC

Test No. 29
Unit No. 0075-B3
Axis (Y-2) - Sweep 4 Min.
4 G's Const. 49,995 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	119	118.5	116	118
Hold	-9.0	-8.5	-6.0	-8.0
5-2000	NC	NC	140 1700	140
2000-5	NC	NC	1700 140	1650
Hold	-11.0	-10.5	-8.0	-10.0
5-2000	NC	NC	140	NC
2000-5	NC	NC	140	NC
Hold	-13.0	-12.5	-10.0	-12.0
5-2000	NC	NC	140	NC
2000-5	NC	NC	140	NC
Hold	-15.0	-14.5	-12.0	-14.0
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	119	118.5	116	118
Hold	+6.0	+6.5	+9.0	+7.0
5-2000-5	NC	NC	NC	NC

Test No. 35
Unit No. 0080-B3
Axis (Y-2) - Sweep 4 Min.
4 G's Const. 49,995 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	121.5	114	118.5	115.5
Hold	-13.5	-6.0	-10.5	-7.5
5-2000	140	140 1700	140 1700	140 1700
2000-5	NC	140	1700 140	1700 140
Hold	-15.5	-8.0	-12.5	-9.5
5-2000	NC	140	NC	NC
2000-5	NC	140	NC	NC
Hold	-17.5	-10.0	-14.5	-11.5
5-2000	NC	NC	NC	NC
2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	121.5	114	118.5	115.5
Hold	+6.0	+13.5	+9.0	+12.0
5-2000-5	NC	NC	NC	NC

Test No. 30
Unit No. 0075-B3
Axis (Y-2) - Sweep 10 Min.
4 G's Const. 49,995 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	119	118.5	116	118
Hold	-9.0	-8.5	-6.0	-8.0
5-2000	NC	135-140	135-140 1700	NC
2000-5	NC	NC	1700 140	NC
Hold	-11.0	-10.5	-8.0	-10.0
5-2000	NC	NC	140	NC
2000-5	NC	NC	135	NC
Set Check	119	118	116	118.5
Hold	-13.0	-12.0	-10.0	-12.5
5-2000	NC	NC	135	NC
2000-5	NC	NC	NC	NC
Hold	-15.0	-14.0	-12.0	-14.5
5-2000	NC	NC	135	NC
2000-5	NC	NC	NC	NC
Hold	-17.0	-16.0	-14.0	-16.5
5-2000	NC	NC	NC	NC

Test No. 36
Unit No. 0080-B3
Axis (Y-2) - Sweep 10 Min.
4 G's Const. 49,995 Ft. Alt.

	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	121	114	118.5	116
Hold	-13.0	-6.0	-10.5	-8.0
5-2000	NC	140,160	1600	NC
2000-5	150	NC	NC	1700
Hold	-15.0	-8.0	-12.5	-10.0
5-2000	NC	140	1700	NC
2000-5	NC	NC	1700	1600
Hold	-17.0	-10.0	-14.5	-12.5
5-2000	NC	140	1700	NC
2000-5	NC	NC	1700	NC
Hold	-19.0	-12.0	-16.5	-14.5
5-2000	NC	NC	NC	NC
2000-5	NC	NC	1700	NC
Hold	-21.0	-14.0	-18.5	-16.5
5-2000	NC	NC	NC	NC

Test No. 30 (continued)

(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	119	118	116	118.5
Hold	+6.0	+7.0	+9.0	+6.5
5-2000-5	NC	NC	NC	NC

Test No. 36 (continued)

Ele.#1	Ele.#2	Ele.#3	Ele.#4
121	114	118.5	116
+6.0	+13.0	+8.5	+11.0
NC	NC	NC	NC

Test No. 19
Unit No. 0075-B3
Axis (Z-1) Mount Resonance 63 cps
Transmissibility 6.13:1 - Sweep 4 Min.
4 G's Const. 10,216 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694.5	696.5	694	694.5
Hold	-6.5	-8.5	-6.0	-6.5
5-2000	NC	NC	NC	NC
2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694.5	696.5	694	694.5
Hold	+8.0	+6.0	+8.5	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 13
Unit No. 0080-B3
Axis (Z-1) Mount Resonance 60 cps
Transmissibility 5.65:1 - Sweep 4 Min.
4 G's Const. 10,216 Ft. Alt.

Ele.#1	Ele.#2	Ele.#3	Ele.#4
694.5	691	694.5	694.5
-6.0	-2.5	-6.0	-6.0
NC	60	NC	NC
NC	NC	NC	NC
Ele.#1	Ele.#2	Ele.#3	Ele.#4
694.5	691	694.5	694.5
+6.0	+9.5	+6.0	+6.0
NC	NC	NC	NC

Test No. 20
Unit No. 0075-B3
Axis (Z-1) - Sweep 10 Min.
4 G's Const. 10,216 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694.5	696.5	694	694.5
Hold	-6.5	-8.5	-6.0	-6.5
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694.5	696.5	694	694.5
Hold	+8.0	+6.0	+8.5	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 14
Unit No. 0080-B3
Axis (Z-1) - Sweep 10 Min.
4 G's Const. 10,216 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694	691	694	694
Hold	-6.0	-3.0	-6.0	-6.0
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	694	691	694	694
Hold	+6.0	+9.0	+6.0	+6.0
5-2000-5	NC	NC	NC	NC

Test No. 21
Unit No. 0075-B3
Axis (Z-1) - Sweep 4 Min.
4 G's Const. 20,187 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459.5	459.5	461.5	459.5
Hold	-6.0	-6.0	-8.0	-6.0
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459.5	459.5	461.5	459.5
Hold	+6.0	+6.0	+8.0	+6.0
5-2000-5	NC	NC	NC	NC

Test No. 15
Unit No. 0080-B3
Axis (Z-1) - Sweep 4 Min.
4 G's Const. 20,187 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	462	459	460	460
Hold	-9.0	-6.0	-7.0	-7.0
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	462	459	460	460
Hold	+6.0	+9.0	+8.0	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 22
Unit No. 0075-B3
Axis (Z-1) - Sweep 10 Min.
4 G's Const. 20,187 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459.5	459.5	461	459
Hold	-6.5	-6.5	-8.0	-6.0
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	459.5	459.5	461	459
Hold	+7.5	+7.5	+6.0	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 16
Unit No. 0080-B3
Axis (Z-1) - Sweep 10 Min.
4 G's Const. 20,187 Ft. Alt.

Ele.#1	Ele.#2	Ele.#3	Ele.#4
460.5	458	459	460
-8.5	-6.0	-7.0	-8.0
NC	NC	NC	NC
Ele.#1	Ele.#2	Ele.#3	Ele.#4
460.5	458	459	460
+5.5	+8.0	+7.0	+6.0
NC	NC	NC	NC

Test No. 23
Unit No. 0075-B3
Axis (Z-1) - Sweep 4 Min.
4 G's Const. 49,995 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	119	118.5	115	118
Hold	-10.0	-9.5	-6.0	-9.0
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	120	118	116	118
Hold	+6.0	+8.0	+10.0	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 17
Unit No. 0080-B3
Axis (Z-1) - Sweep 4 Min.
4 G's Const. 49,995 Ft. Alt.

Ele.#1	Ele.#2	Ele.#3	Ele.#4
122	114.5	118	116
-13.5	-6.0	-9.5	-7.5
NC	NC	NC	NC
Ele.#1	Ele.#2	Ele.#3	Ele.#4
122	114.5	118	116
+4.0	+11.5	+8.0	+10.0
NC	NC	NC	NC

Test No. 24
Unit No. 0075-B3
Axis (Z-1) - Sweep 10 Min.
4 G's Const. 49,995 Ft. Alt.

(OPEN)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	120	118.5	116	118.5
Hold	-10.0	-8.5	-6.0	-8.5
5-2000-5	NC	NC	NC	NC
(CLOSED)	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	120	118	116	118
Hold	+6.0	+8.0	+10.0	+8.0
5-2000-5	NC	NC	NC	NC

Test No. 18
Unit No. 0080-B3
Axis (Z-1) - Sweep 10 Min.
4 G's Const. 49,995 Ft. Alt.

	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	122	113.5	118	116
Hold	-14.5	-6.0	-10.5	-8.5
5-2000-5	NC	NC	NC	NC
	Ele.#1	Ele.#2	Ele.#3	Ele.#4
Set Point	122	113.5	118	116
Hold	+6.0	+14.5	+10.0	+12.0
5-2000-5	NC	NC	NC	NC

ATTACHMENT NO. 2

Transmissibility
Lord Mounts (.125" excursion) on XM-10 Baro #0075-B3

4 G's Constant Input

(X-2)			(Y-2)			(Z-1)		
CPS	G's Out	Trans.	CPS	G's Out	Trans.	CPS	G's Out	Trans.
15	4.0	1:1	15	5.2	1.3:1	15	5.3	1.33:1
20	4.2	1.05:1	20	4.8	1.2:1	20	5.5	1.38:1
25	4.5	1.13:1	25	4.7	1.18:1	25	5.6	1.4:1
30	4.7	1.18:1	30	4.4	1.1:1	30	5.6	1.4:1
35	6.5	1.63:1	35	4.4	1.1:1	35	5.8	1.45:1
40	7.4	1.85:1	40	4.4	1.1:1	40	5.8	1.45:1
45	8.7	2.18:1	45	4.5	1.13:1	45	7.6	1.9:1
50	12.0	3.0:1	50	4.5	1.13:1	50	9.5	2.38:1
55	18.0	4.5:1	55	4.5	1.13:1	55	12.5	3.13:1
60 (max.)	23.0	5.75:1	60	4.8	1.2:1	60	20.0	5.0:1
65	20.0	5.0:1	65	5.0	1.25:1	63 (max.)	24.5	6.13:1
70	14.0	3.5:1	70	5.2	1.3:1	65	22.0	5.5:1
75	9.5	2.38:1	75	5.6	1.4:1	70	16.5	4.13:1
80	8.2	2.05:1	80	6.0	1.5:1	75	12.0	3.0:1
85	5.6	1.4:1	85	6.4	1.6:1	80	8.5	2.13:1
90	4.4	1.1:1	90	6.8	1.7:1	85	6.5	1.63:1
95	3.7	0.925:1	95	7.6	1.9:1	90	5.2	1.3:1

(X-2)			(Y-2)			(Z-1)		
CPS	G's Out	Trans.	CPS	G's Out	Trans.	CPS	G's Out	Trans.
100	3.2	0.80:1	100	8.2	2.05:1	95	4.3	1.08:1
110	2.4	0.60:1	110	7.8	1.95:1	100	3.6	0.9:1
120	1.9	0.475:1	120	8.0	2.0:1	110	2.6	0.65:1
130	1.6	0.40:1	130	12.0	3.0:1	120	2.0	0.5:1
140	1.4	0.35:1	140	19.5	4.88:1	130	1.6	0.4:1
150	1.2	0.30:1	145 (max.)	30.0	7.5:1	140	1.3	0.325:1
160	1.0	0.25:1	150	30.0	7.5:1	150	1.1	0.275:1
170	0.90	0.22:1	155	23.5	5.9:1	160	0.94	0.235:1
180	0.85	0.21:1	160	18.5	4.63:1	170	0.95	0.238:1
190	0.76	0.19:1	170	7.8	1.95:1	180	0.75	0.188:1
200	0.66	0.17:1	180	6.0	1.50:1	190	0.65	0.163:1
220	0.56	0.14:1	190	4.9	1.22:1	200	0.55	0.138:1
240	0.49	0.12:1	200	4.2	1.05:1	225	0.45	0.113:1
260	0.43	0.107:1	225	2.6	0.65:1	250	0.36	0.09:1
280	0.38	0.095:1	250	1.7	0.425:1	275	0.31	0.078:1
300	0.32	0.08:1	275	1.3	0.325:1	300	0.26	0.065:1
320	0.15	0.038:1	300	1.0	0.25:1	325	0.22	0.055:1
340	0.79	0.198:1	325	0.9	0.22:1	350	0.19	0.0475:1
360	0.58	0.145:1	350	0.74	0.185:1	375	0.16	0.04:1
380	0.59	0.148:1	375	0.50	0.125:1	400	0.15	0.038:1
400	0.74	0.185:1	400	0.40	0.10:1	425	0.13	0.033:1
430	1.7	0.425:1	425	0.38	0.095:1	450	0.13	0.033:1
450	0.63	0.158:1	450	0.36	0.09:1	475	0.12	0.03:1

(X-2)			(Y-2)			(Z-1)		
CPS	G's Out	Trans.	CPS	G's Out	Trans.	CPS	G's Out	Trans.
100	3.2	0.80:1	100	8.2	2.05:1	95	4.3	1.08:1
110	2.4	0.60:1	110	7.8	1.95:1	100	3.6	0.9:1
120	1.9	0.475:1	120	8.0	2.0:1	110	2.6	0.65:1
130	1.6	0.40:1	130	12.0	3.0:1	120	2.0	0.5:1
140	1.4	0.35:1	140	19.5	4.88:1	130	1.6	0.4:1
150	1.2	0.30:1	145 (max.)	30.0	7.5:1	140	1.3	0.325:1
160	1.0	0.25:1	150	30.0	7.5:1	150	1.1	0.275:1
170	0.90	0.22:1	155	23.5	5.9:1	160	0.94	0.235:1
180	0.85	0.21:1	160	18.5	4.63:1	170	0.95	0.238:1
190	0.76	0.19:1	170	7.8	1.95:1	180	0.75	0.188:1
200	0.66	0.17:1	180	6.0	1.50:1	190	0.65	0.163:1
220	0.56	0.14:1	190	4.9	1.22:1	200	0.55	0.138:1
240	0.49	0.12:1	200	4.2	1.05:1	225	0.45	0.113:1
260	0.43	0.107:1	225	2.6	0.65:1	250	0.36	0.09:1
280	0.38	0.095:1	250	1.7	0.425:1	275	0.31	0.078:1
300	0.32	0.08:1	275	1.3	0.325:1	300	0.26	0.065:1
320	0.15	0.038:1	300	1.0	0.25:1	325	0.22	0.055:1
340	0.79	0.198:1	325	0.9	0.22:1	350	0.19	0.0475:1
360	0.58	0.145:1	350	0.74	0.185:1	375	0.16	0.04:1
380	0.59	0.148:1	375	0.50	0.125:1	400	0.15	0.038:1
400	0.74	0.185:1	400	0.40	0.10:1	425	0.13	0.033:1
430	1.7	0.425:1	425	0.38	0.095:1	450	0.13	0.033:1
450	0.63	0.158:1	450	0.36	0.09:1	475	0.12	0.03:1

(X-2)			(Y-2)			(Z-1)		
CPS	G's Out	Trans.	CPS	G's Out	Trans.	CPS	G's Out	Trans.
500	0.24	0.06:1	475	0.35	0.088:1	500	0.10	0.025:1
550	0.18	0.045:1	500	0.34	0.085:1	550	0.09	0.023:1
600	0.18	0.045:1				600	0.075	0.0188:1
650	0.14	0.035:1	550	0.33	0.083:1	650	0.065	0.0163:1
700	0.26	0.065:1				700	0.08	0.02:1
750	0.26	0.065:1	600	0.32	0.08:1	750	0.065	0.0163:1
800	0.26	0.065:1	650	0.36	0.09:1	800	0.06	0.015:1
850	0.28	0.07:1	700	0.65	0.162:1	850	0.06	0.015:1
900	0.22	0.055:1	750	0.75	0.188:1	900	0.055	0.0138:1
950	0.12	0.03:1	800	0.48	0.12:1	950	0.055	0.0138:1
1000	0.14	0.035:1	850	0.33	0.083:1	1000	0.06	0.015:1
1100	0.10	0.025:1	900	0.30	0.075:1	1100	0.06	0.015:1
1200	0.04	0.010:1	950	0.36	0.09:1	1200	0.045	0.0113:1
1300	0.025	0.0063:1	1000	0.50	0.125:1	1300	0.04	0.01:1
1400	0.035	0.00875:1	1100	0.66	0.165:1	1400	0.07	0.0175:1
1500	0.08	0.020:1	1150	0.50	0.125:1	1500	0.05	0.0125:1
1600	0.05	0.0125:1	1200	0.22	0.055:1	1600	0.12	0.03:1
1700	0.04	0.010:1	1300	0.42	0.105:1	1700	0.16	0.04:1
1800	0.05	0.0125:1	1400	0.28	0.07:1	1800	0.27	0.068:1
1900	0.05	0.0125:1	1500	0.37	0.093:1	1900	0.22	0.055:1
			1550	0.55	0.137:1			
2000	0.10	0.025:1	1600	0.40	0.10:1	2000	0.14	0.035:1
			1700	0.34	0.085:1			

(X-2)			(Y-2)			(Z-1)		
CPS	G's Out	Trans.	CPS	G's Out	Trans.	CPS	G's Out	Trans.
			1750	0.40	0.10:1			
			1800	0.25	0.065:1			
			1900	0.14	0.035:1			
			2000	0.08	0.02:1			

Transmissibility
Lord Mounts (.125" excursion) on XM-10 Baro #0080-B3

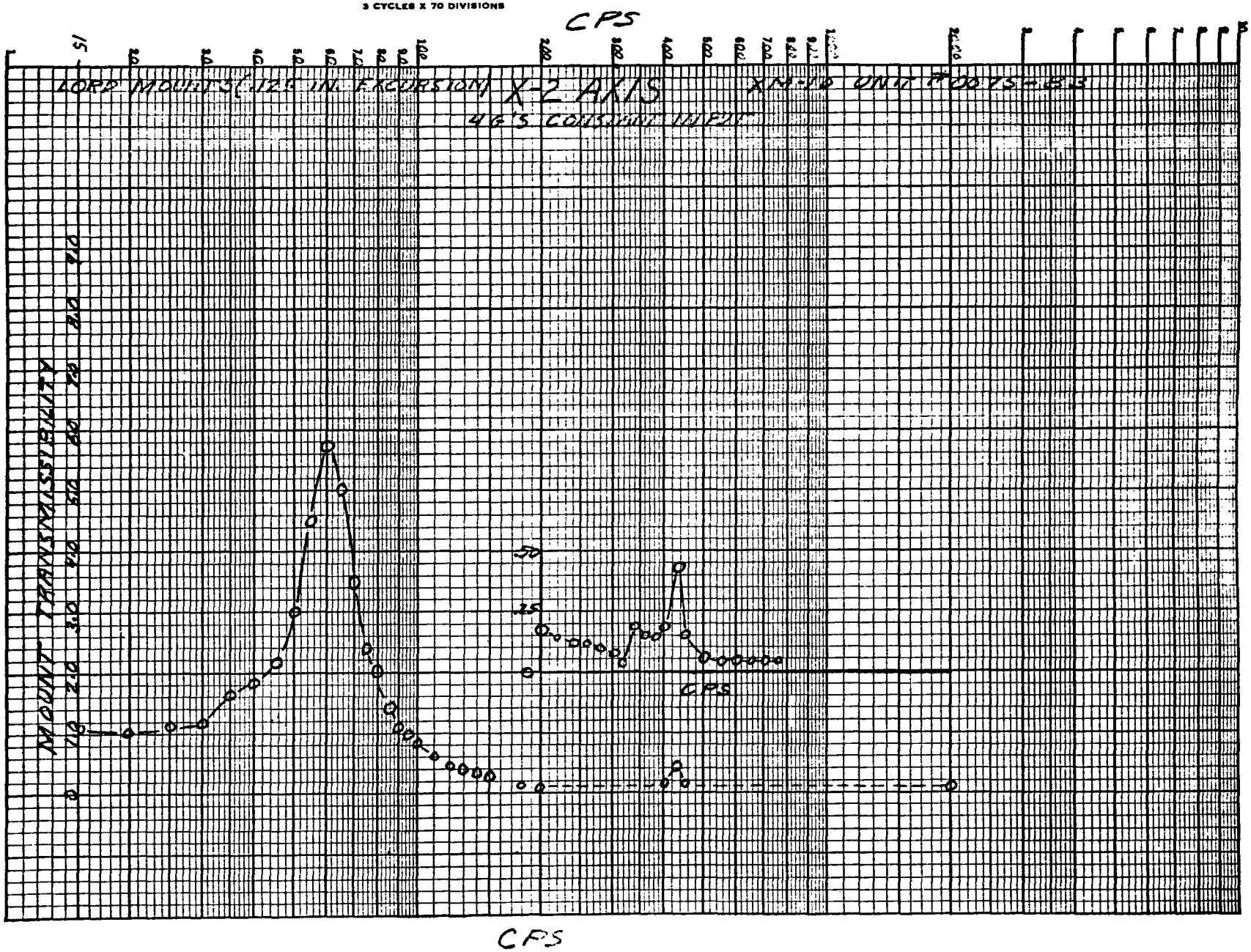
4 G's Constant Input

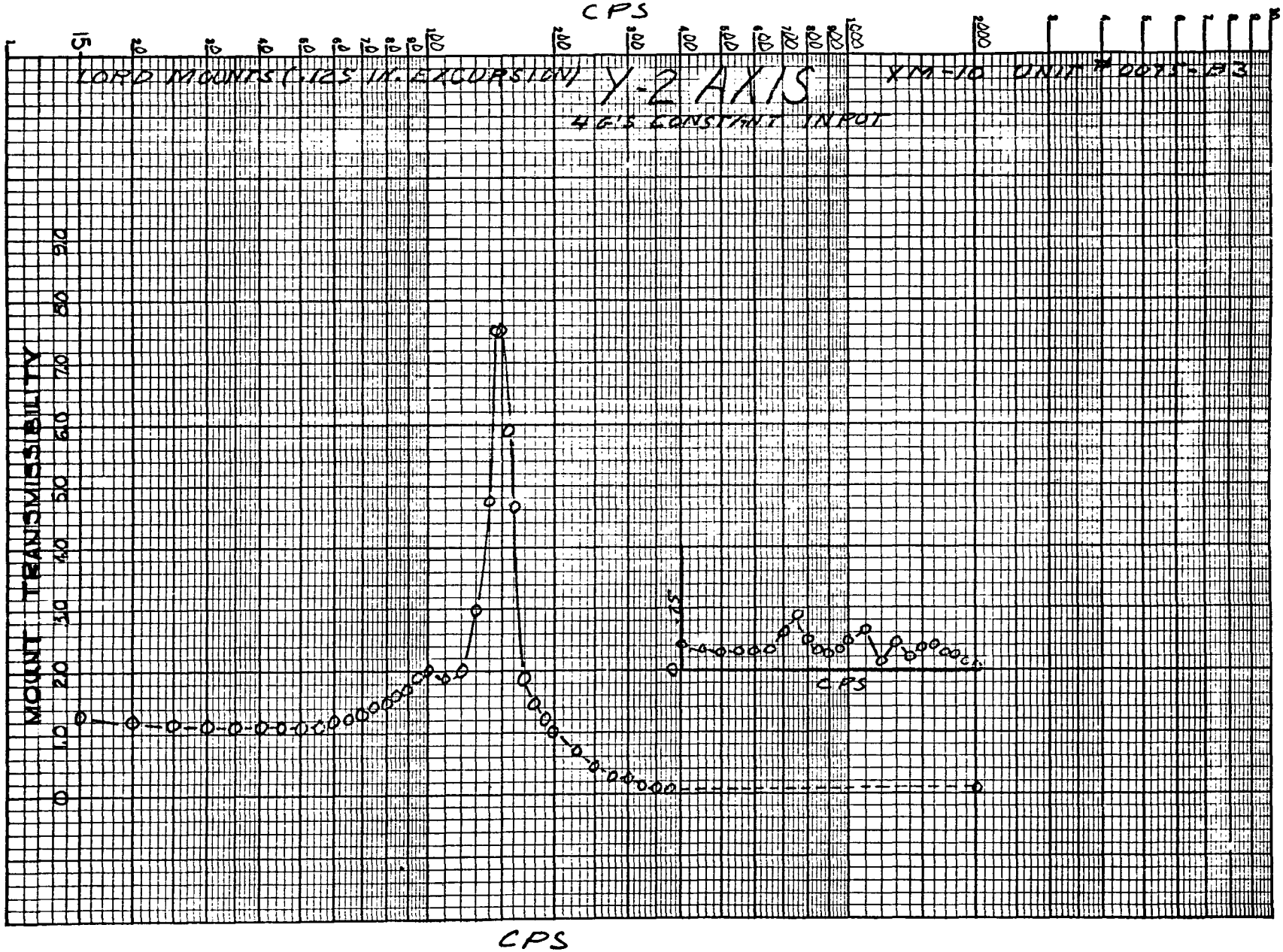
(X-2)			(Y-2)			(Z-1)		
CPS	G's Out	Trans.	CPS	G's Out	Trans.	CPS	G's Out	Trans.
15	4.4	1.1:1	15	4.3	1.07:1	15	3.0	0.75:1
20	4.3	1.07:1	20	4.3	1.07:1	20	4.0	1.0:1
25	5.3	1.32:1	25	4.3	1.07:1	25	5.0	1.25:1
30	6.0	1.5:1	30	4.3	1.07:1	30	5.2	1.30:1
35	4.8	1.2:1	45	4.4	1.1:1	35	5.8	1.45:1
40	5.3	1.32:1	40	4.4	1.1:1	40	6.5	1.63:1
45	6.1	1.53:1	45	4.5	1.13:1	45	7.9	1.98:1
50	7.7	1.93:1	50	4.7	1.18:1	50	11.0	2.75:1
55	10.5	2.63:1	55	4.8	1.2:1	55	14.5	3.63:1
60	16.5	4.13:1	60	5.0	1.25:1	60 (max.)	22.5	5.65:1
63.5 (max.)	23.0	5.75:1	65	5.4	1.35:1	65	20.0	5.0:1
65	19.5	4.88:1	70	5.8	1.45:1	70	13.5	3.3:1

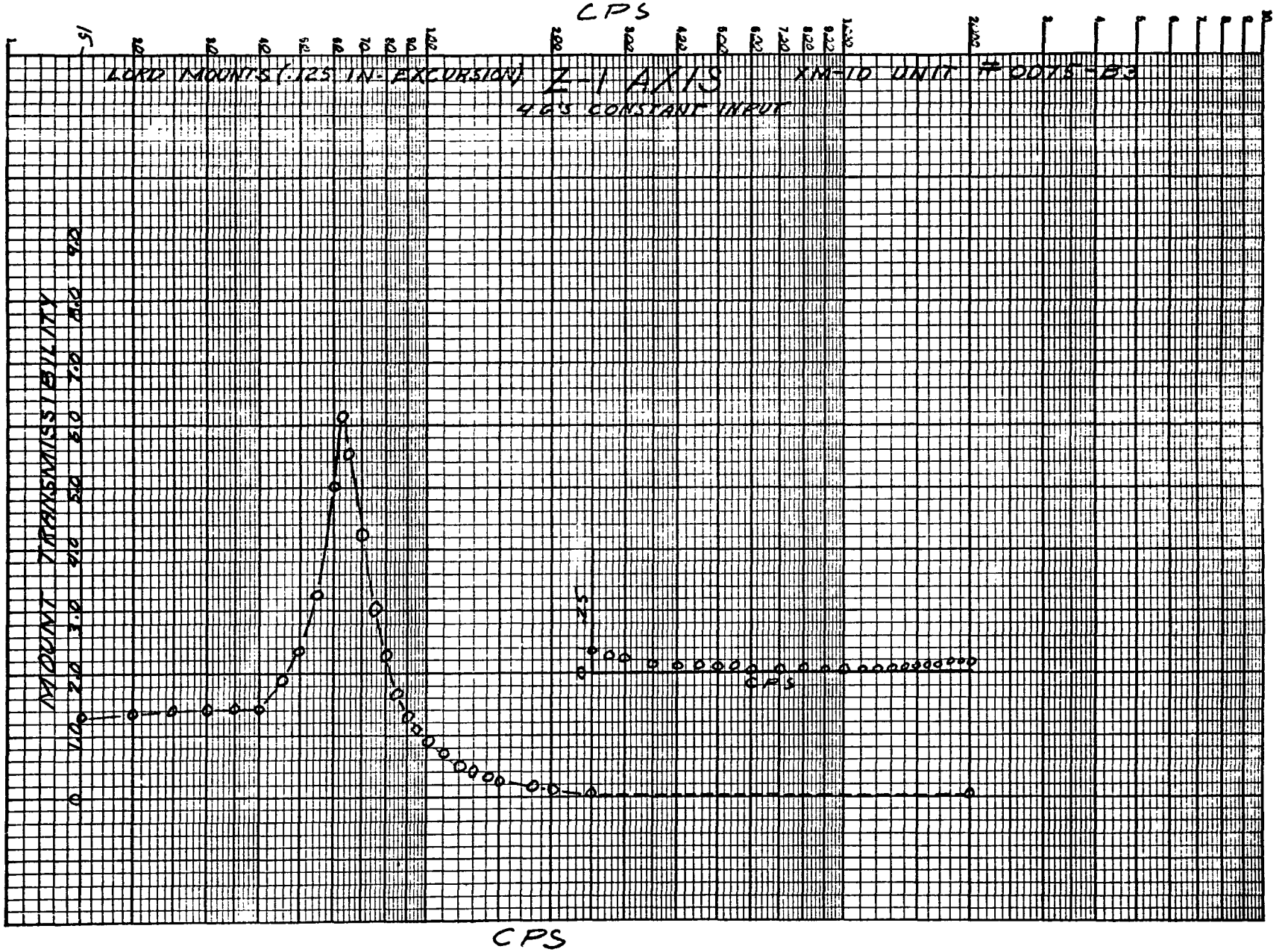
(X-2)			(Y-2)			(Z-1)		
CPS	G's Out	Trans.	CPS	G's Out	Trans.	CPS	G's Out	Trans.
70	12.0	3.0:1	75	6.2	1.55:1	75	9.5	2.38:1
75	8.4	2.1:1	80	6.8	1.65:1	80	7.0	1.75:1
80	6.0	1.5:1	85	7.5	1.87:1	85	5.3	1.33:1
85	4.0	1.0:1	90	8.5	2.13:1	90	4.3	1.08:1
90	3.8	0.95:1	95	10.0	2.5:1	95	3.5	0.88:1
95	3.1	0.78:1	100	12.5	3.13:1	100	3.9	0.98:1
100	2.6	0.65:1	110	11.0	2.75:1	110	3.2	0.8:1
110	2.1	0.53:1	120	9.5	2.38:1	120	1.8	0.45:1
120	1.6	0.40:1	130	13.0	3.25:1	130	1.4	0.35:1
130	1.4	0.35:1	135	21.5	5.4:1	140	1.2	0.3:1
140	1.2	0.30:1	140 (max.)	33.0	8.25:1	150	1.1	0.275:1
			145	32.0	8.0:1			
150	1.0	0.25:1	150	25.0	6.25:1	160	0.95	0.238:1
160	0.88	0.22:1	160	17.0	4.25:1	170	0.75	0.188:1
170	0.80	0.20:1	170	11.0	2.75:1	180	0.63	0.157:1
180	0.78	0.195:1	180	8.5	2.13:1	190	0.56	0.14:1
190	0.75	0.188:1	190	7.0	1.75:1	200	0.55	0.138:1
200	0.76	0.19:1	200	5.6	1.40:1	225	0.43	0.108:1
220	0.69	0.173:1	225	3.7	0.93:1	250	0.35	0.088:1
240	0.66	0.165:1	250	2.6	0.65:1	275	0.28	0.07:1
260	0.65	0.163:1	275	1.9	0.475:1	300	0.22	0.055:1
280	0.77	0.193:1	300	1.5	0.375:1	325	0.18	0.045:1
300	1.1	0.275:1	325	1.3	0.325:1	350	0.15	0.0375:1

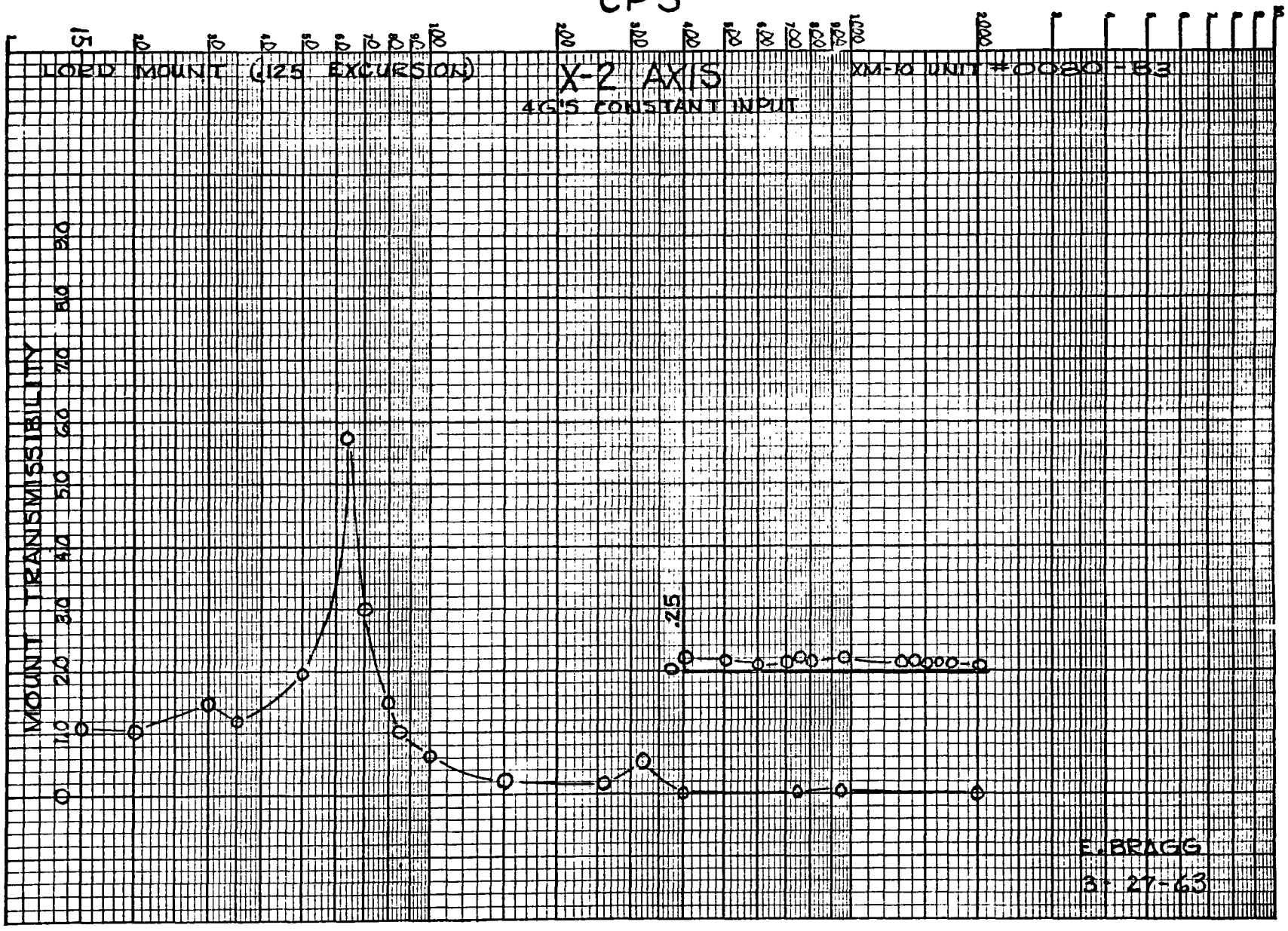
(X-2)			(Y-2)			(Z-1)		
CPS	G's Out	Trans.	CPS	G's Out	Trans.	CPS	G's Out	Trans.
320	2.5	0.625:1	350	1.5	0.375:1	375	0.13	0.0325:1
340	1.7	0.425:1	375	1.1	0.275:1	400	0.12	0.030:1
360	0.59	0.148:1	400	0.95	0.238:1	450	0.10	0.020:1
380	0.28	0.07:1	450	0.76	0.19:1	500	0.075	0.019:1
400	0.17	0.043:1	500	0.66	0.165:1	550	0.075	0.019:1
450	0.065	0.016:1	550	0.69	0.173:1	600	0.068	0.017:1
500	0.045	0.013:1	600	0.60	0.15:1	650	0.060	0.015:1
550	0.04	0.01:1	650	0.56	0.14:1	700	0.056	0.014:1
600	0.035	0.009:1	700	0.68	0.17:1	750	0.062	0.0155:1
650	0.05	0.013:1	750	0.28	0.07:1	800	0.050	0.0125:1
700	0.04	0.01:1	800	0.60	0.15:1	850	0.068	0.017:1
750	0.14	0.035:1	850	0.56	0.14:1	900	0.068	0.017:1
800	0.10	0.025:1	900	0.50	0.13:1	950	0.062	0.0155:1
850	0.06	0.015:1	950	0.54	0.14:1	1000	0.062	0.0155:1
900	0.085	0.021:1	1000	0.76	0.19:1	1100	0.060	0.015:1
950	0.19	0.048:1	1100	0.80	0.20:1	1200	0.060	0.015:1
1000	0.17	0.043:1	1200	1.0	0.25:1	1300	0.11	0.028:1
			1250	0.47	0.18:1			
1100	0.16	0.040:1	1300	0.22	0.055:1	1400	0.13	0.033:1
1200	0.10	0.025:1	1400	0.11	0.028:1	1500	0.09	0.023:1
1300	0.05	0.013:1	1500	0.12	0.03:1	1600	0.07	0.018:1
1400	0.07	0.018:1	1600	0.31	0.078:1	1700	0.09	0.023:1
1500	0.05	0.013:1	1700	0.50	0.125:1	1800	0.045	0.011:1

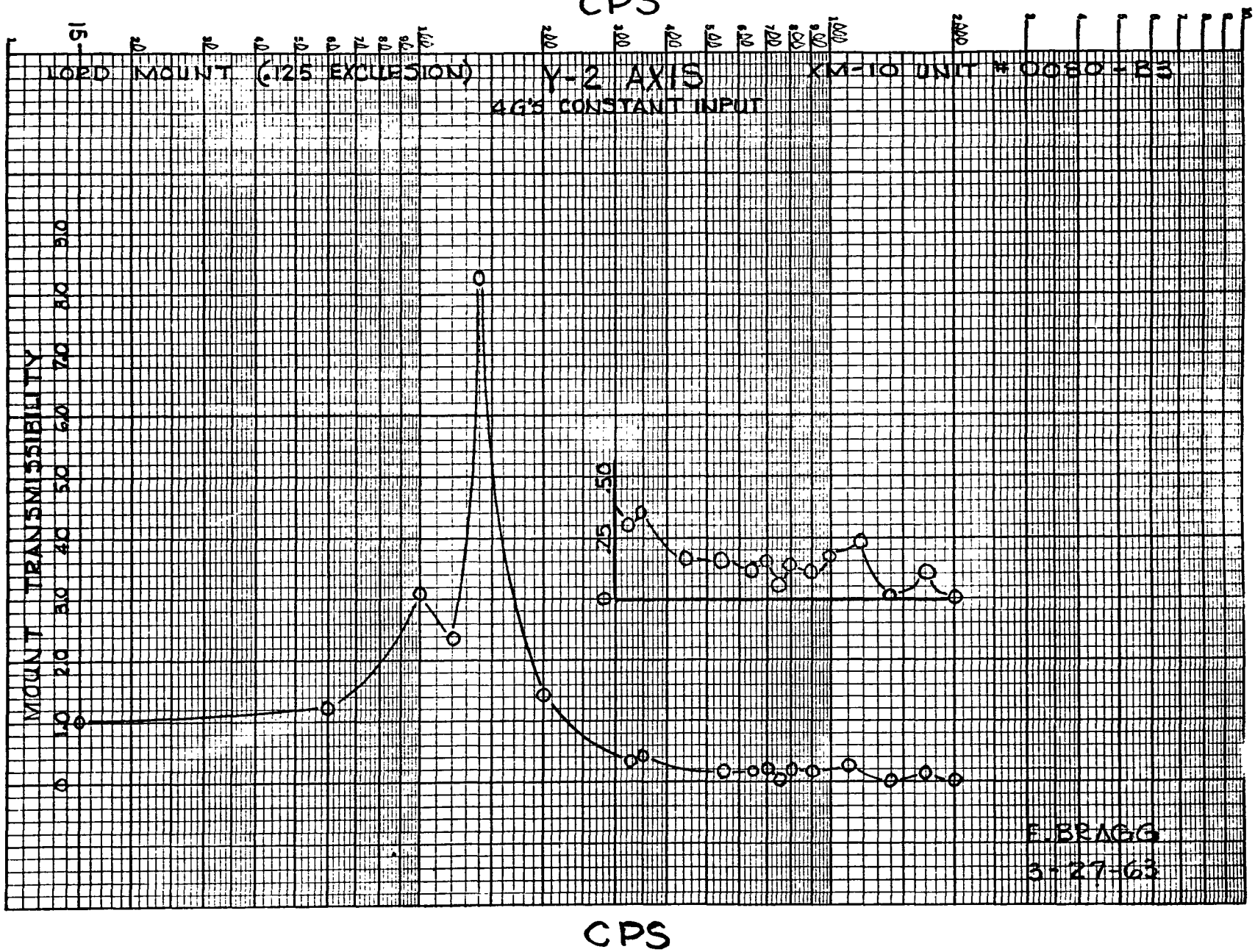
(X-2)			(Y-2)			(Z-1)		
CPS	G's Out	Trans.	CPS	G's Out	Trans.	CPS	G's Out	Trans.
1600	0.04	0.01:1	1800	0.095	0.024:1	1900	0.05	0.013:1
1700	0.05	0.013:1	1900	0.062	0.0155:1	2000	0.11	0.028:1
1800	0.04	0.01:1	2000	0.060	0.015:1			
1900	0.04	0.01:1						
2000	0.04	0.01:1						

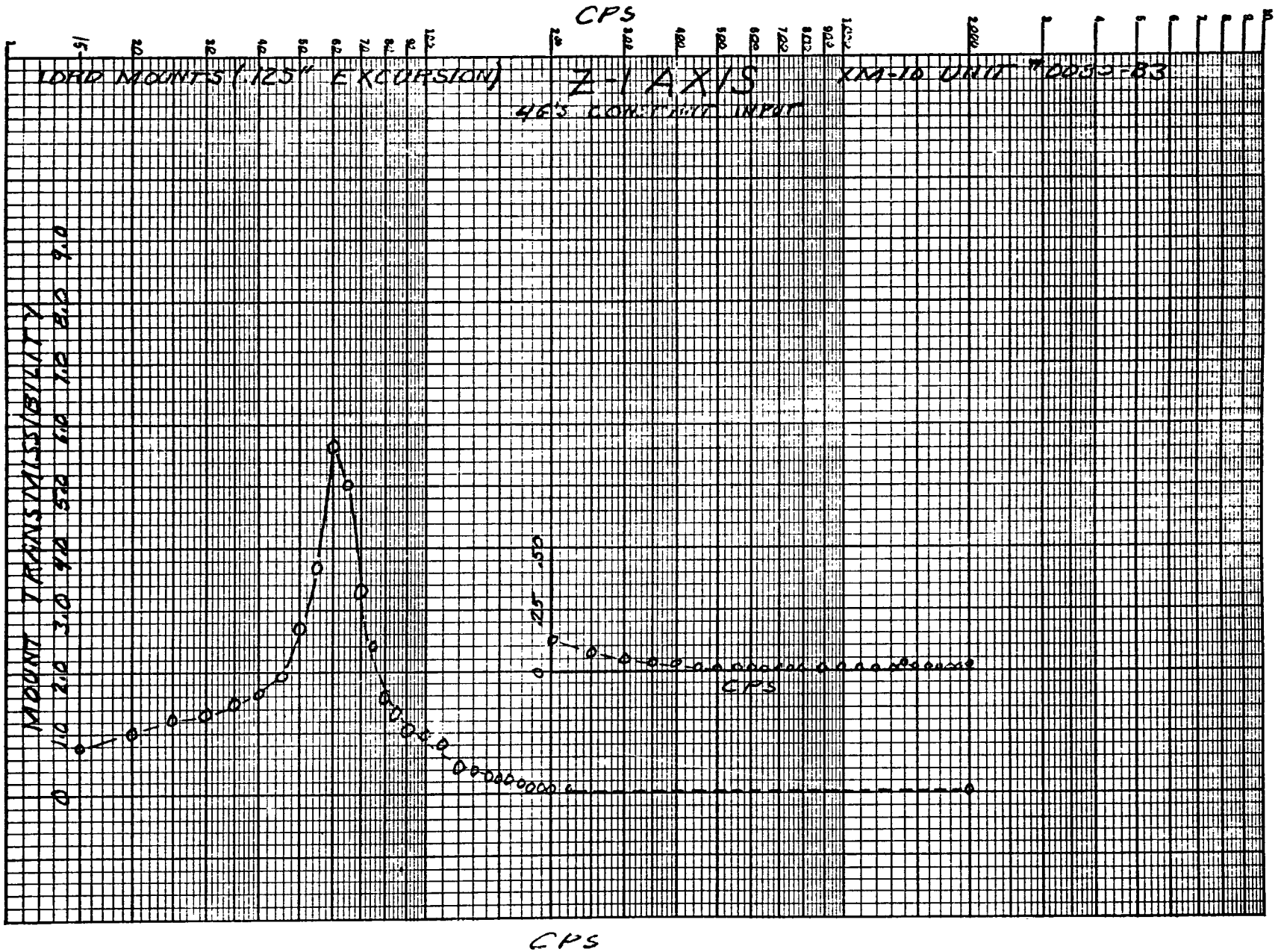

K•E SEMI-LOGARITHMIC 359-71
KEUFFEL & ESSER CO. MADE IN U.S.A.
3 CYCLES X 70 DIVISIONS
CPS
LORD MOUNT SIZE IN. EXCURSION X-2 AXIS XM-10 UNIT #0075 = 83
46'S CONSTANT INPUT
MOUNT TRANSMISSIBILITY
50
25
0
CPS
CPS

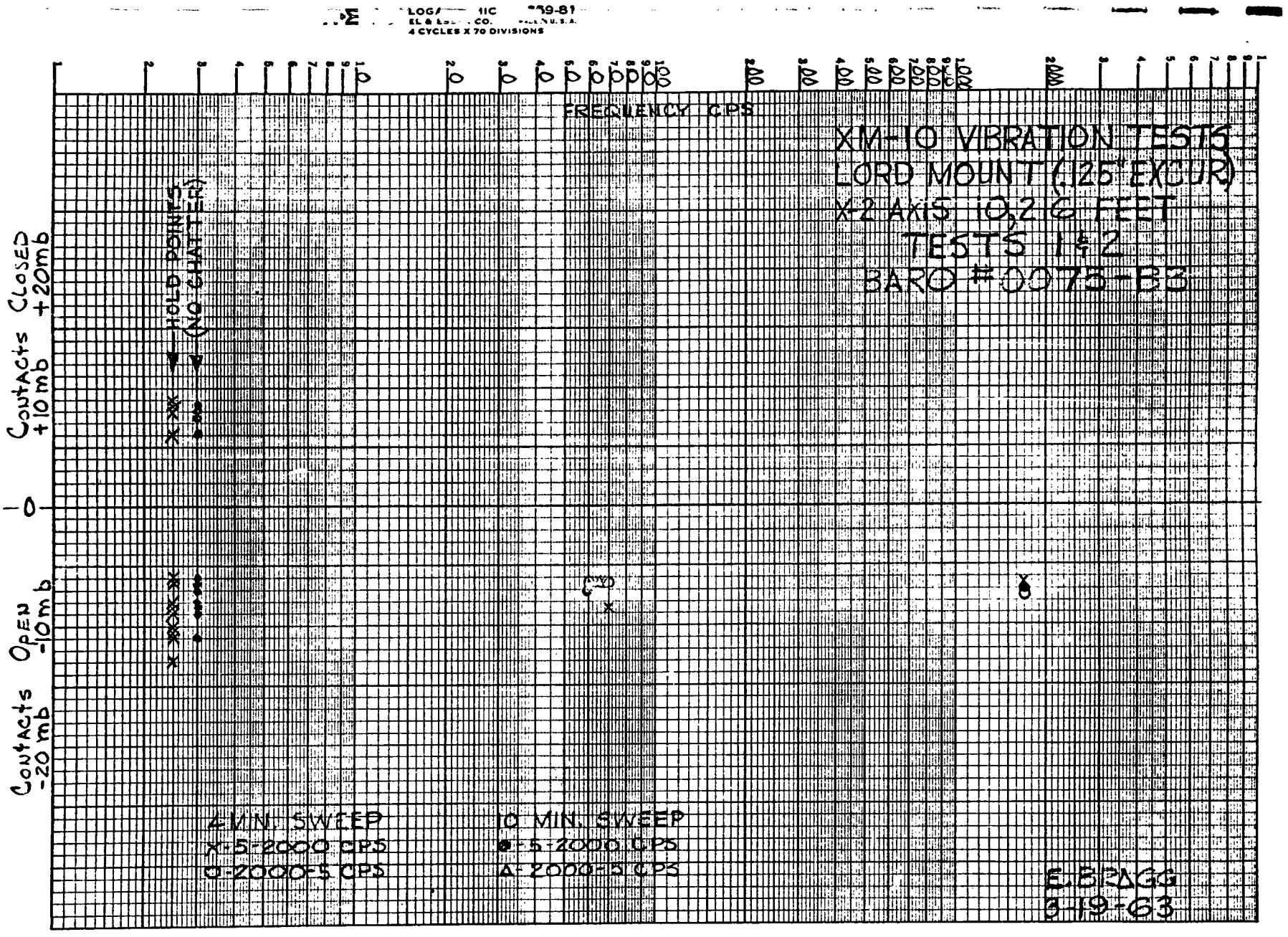

K&E SEMI-LOGARITHMIC 359-71
KEUFFEL & ESSER CO. MADE IN U.S.A.
3 CYCLES X 70 DIVISIONS
CPS
LORD MOUNTS (.125 IN. EXCURSION) Y-2 AXIS
4 G'S CONSTANT INPUT
XM-10 UNIT # 0015-P3
MOUNT TRANSMISSIBILITY
CPS
CPS

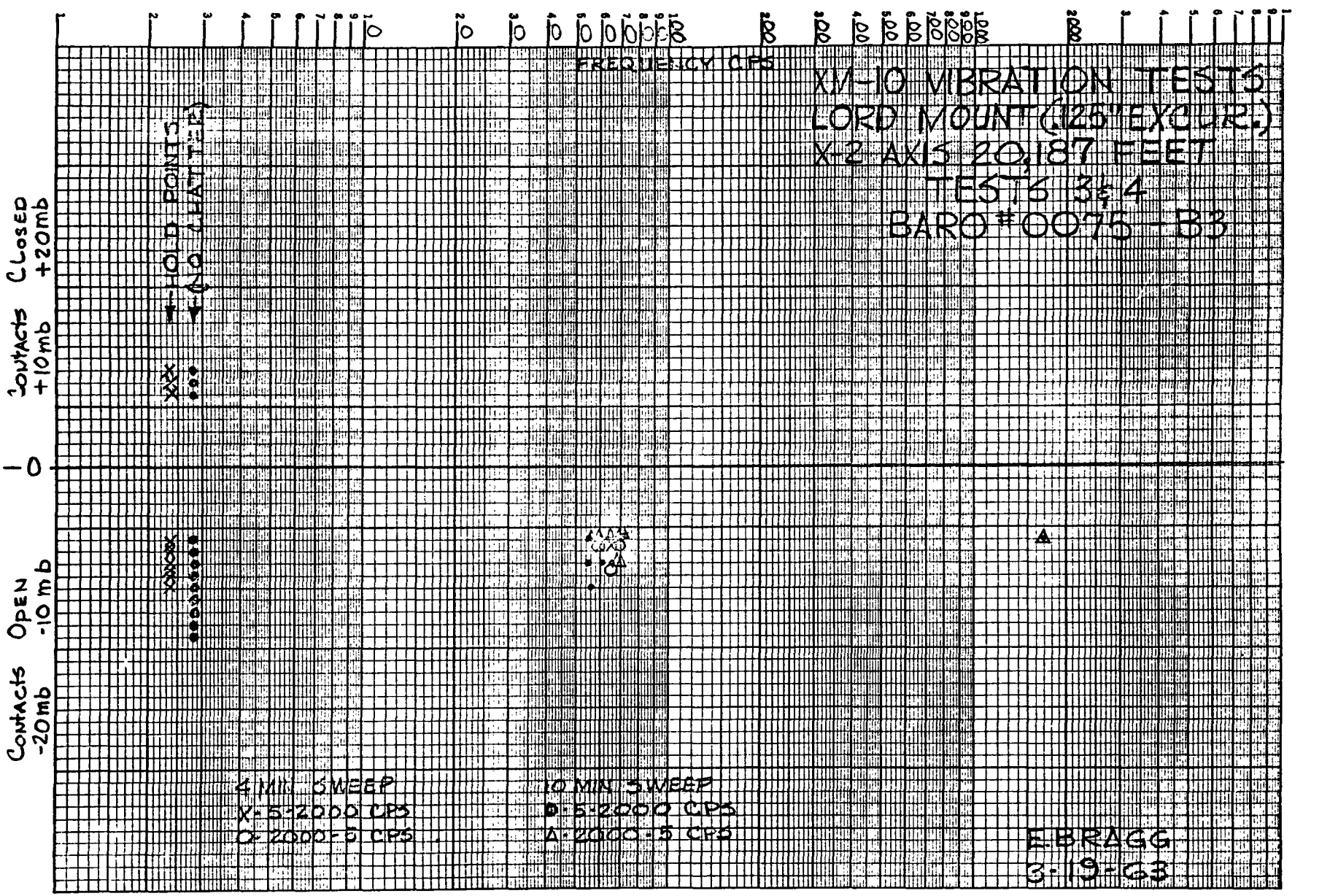

K&E SEMI-LOGARITHMIC 359-71
KEUFFEL & ESSER CO. MADE IN U.S.A.
3 CYCLES X 70 DIVISIONS
CPS
LORD MOUNTS (.125 IN. EXCURSION) Z-1 AXIS XM-10 UNIT # 0015-B3
4 G'S CONSTANT INPUT
ACCELERATION AMPLITUDE (G'S)
CPS


K&E SEMI-LOGARITHMIC 359-71
KEUFFEL & ESSER CO. MADE IN U.S.A.
3 CYCLES X 70 DIVISIONS
CPS
LORD MOUNT (.125 EXCURSION)
X-2 AXIS
4G'S CONSTANT INPUT
XM-10 UNIT #00280-63
MOUNT TRANSMISSIBILITY
.25
E. BRAGG
3-27-63

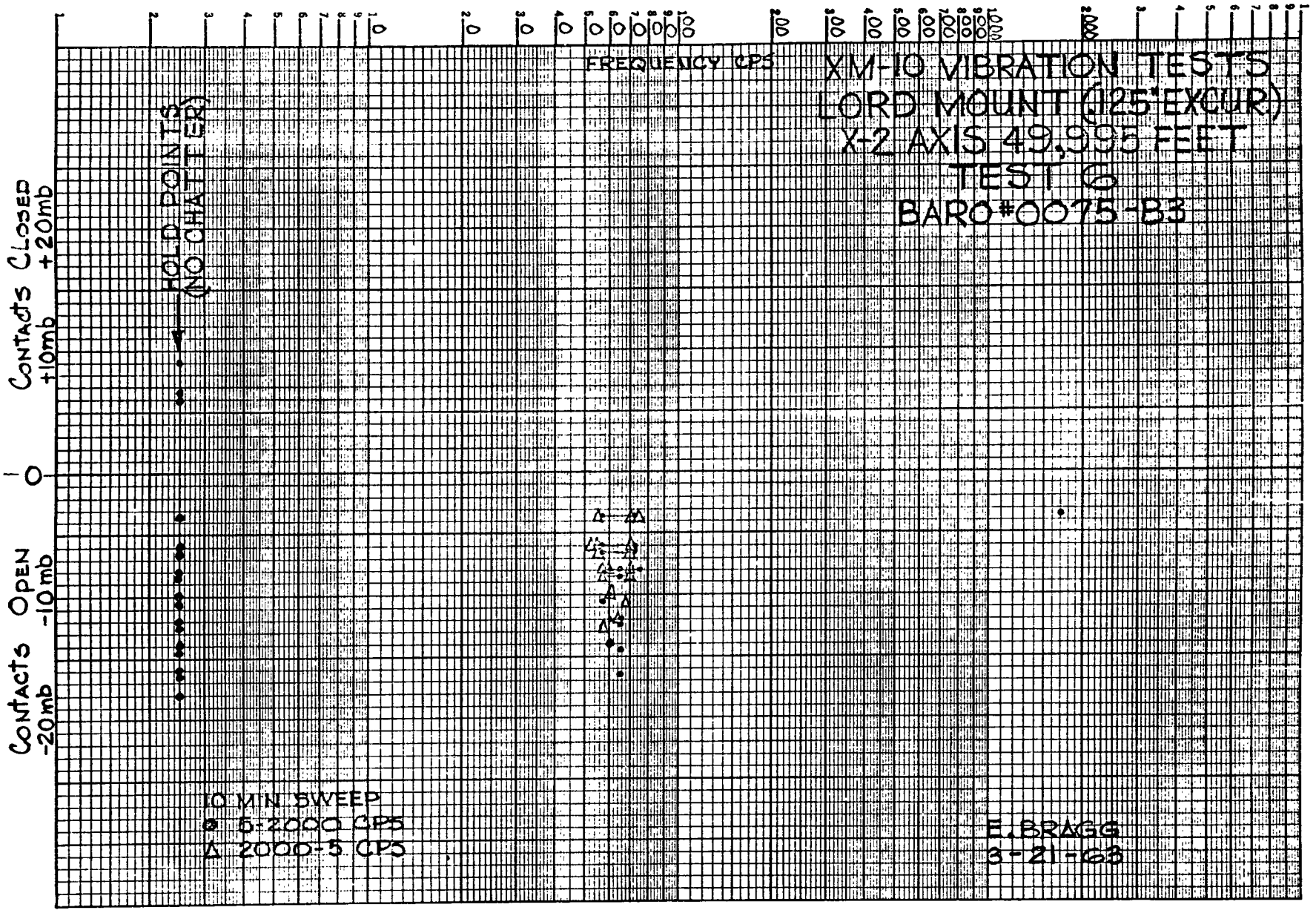

K•Σ SEMI-LOGARITHMIC 359-71
KEUFFEL & ESSER CO. MADE IN U.S.A.
3 CYCLES X 70 DIVISIONS
CPS
15
20
30
40
50
60
70
80
90
100
200
300
400
500
600
700
800
900
1000
2000
LOED MOUNT (.125 EXCLUSION) Y-2 AXIS XM-10 UNIT # 0080-B3
4G'S CONSTANT INPUT
MOUNT TRANSMISSIBILITY
0
10
20
30
40
50
60
70
80
90
100
50
25
0
E.BRAGG
3-27-63
CPS

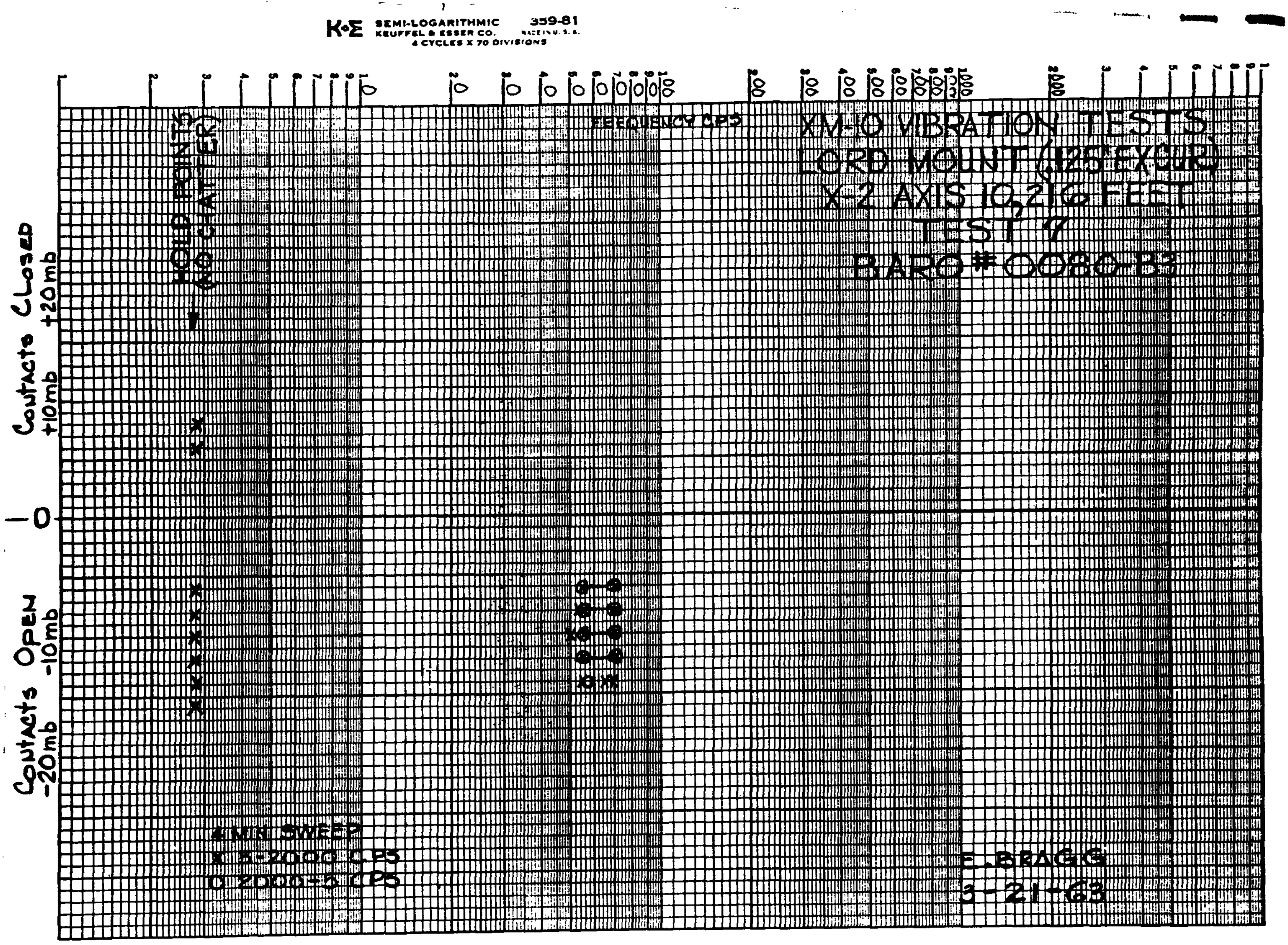

KEUFFEL & ESSER CO. MADE IN U.S.A.
3 CYCLES X 70 DIVISIONS
CPS
LOAD MOUNTS (.125" EXCURSION) Z-1 AXIS XM-10 UNIT #2053-83
46's CONTROL INPUT
MOUNT TRANSMISSIBILITY
0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0
.125
0
CPS
CPS


LOG/ — IIC
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNT (.125" EXCUR)
X-2 AXIS 10, 2 G FEET
TESTS 1 & 2
BARO # 0075-E3
HOLD POINTS (NO CHATTER)
CONTACTS CLOSED +20mb
+10mb
0
OPEN -10mb
CONTACTS -20mb
4 MIN. SWEEP
X-5-2000 CPS
O-2000-5 CPS
10 MIN. SWEEP
●-5-2000 CPS
Δ-2000-5 CPS
E.B. 2-AGG
6-19-63

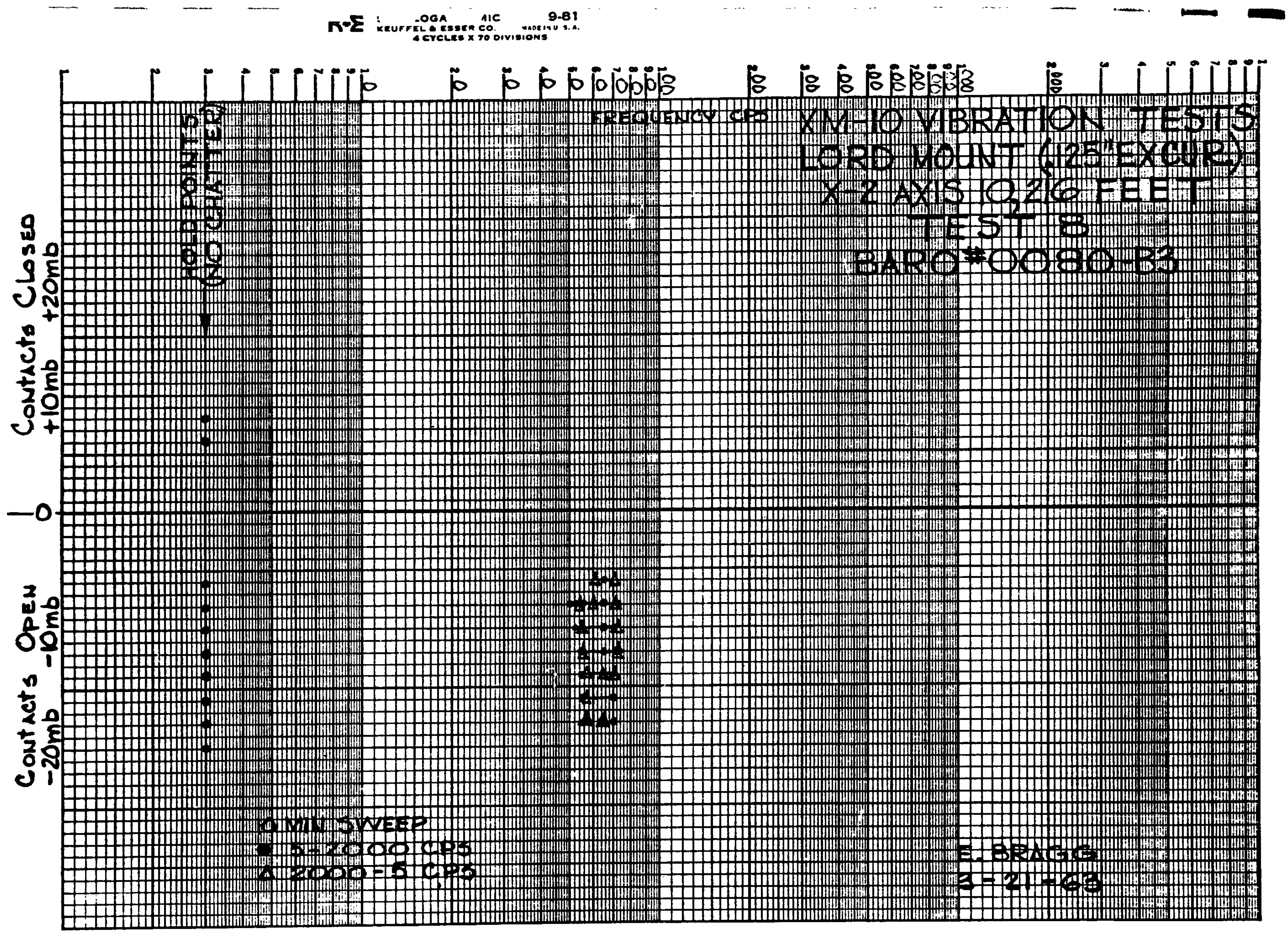

K&E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TEST
LORD MOUNT (.125" EXCUR.)
X-2 AXIS 20,187 FEET
TEST 3 & 4
BARO #0075 - 63
CONTACTS CLOSED +20mb
CONTACTS +10mb
0
CONTACTS OPEN -10mb
CONTACTS -20mb
HOLD POINTS
4 MIN. SWEEP
X - 5-2000 CPS
O - 2000-5 CPS
10 MIN. SWEEP
□ - 5-2000 CPS
Δ - 2000-5 CPS
E. BRAGG
3-19-63

XM-10 VIBRATION TESTS
LORD MOUNT (2.5" EXTRA)
X-2 AXIS 49,995 FEET
TEST 5
BARO #00.75-B2
FREQUENCY CPS
E. BRAGG
3-21-63
4 MIN SWEEP
X 5-2000 CPS
O 2000-5 CPS
HOLD POINTS
(NO CHATTER)
CONTACTS OPEN
-20mb -10mb
CONTACTS CLOSED
+10mb +20mb
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
9-81

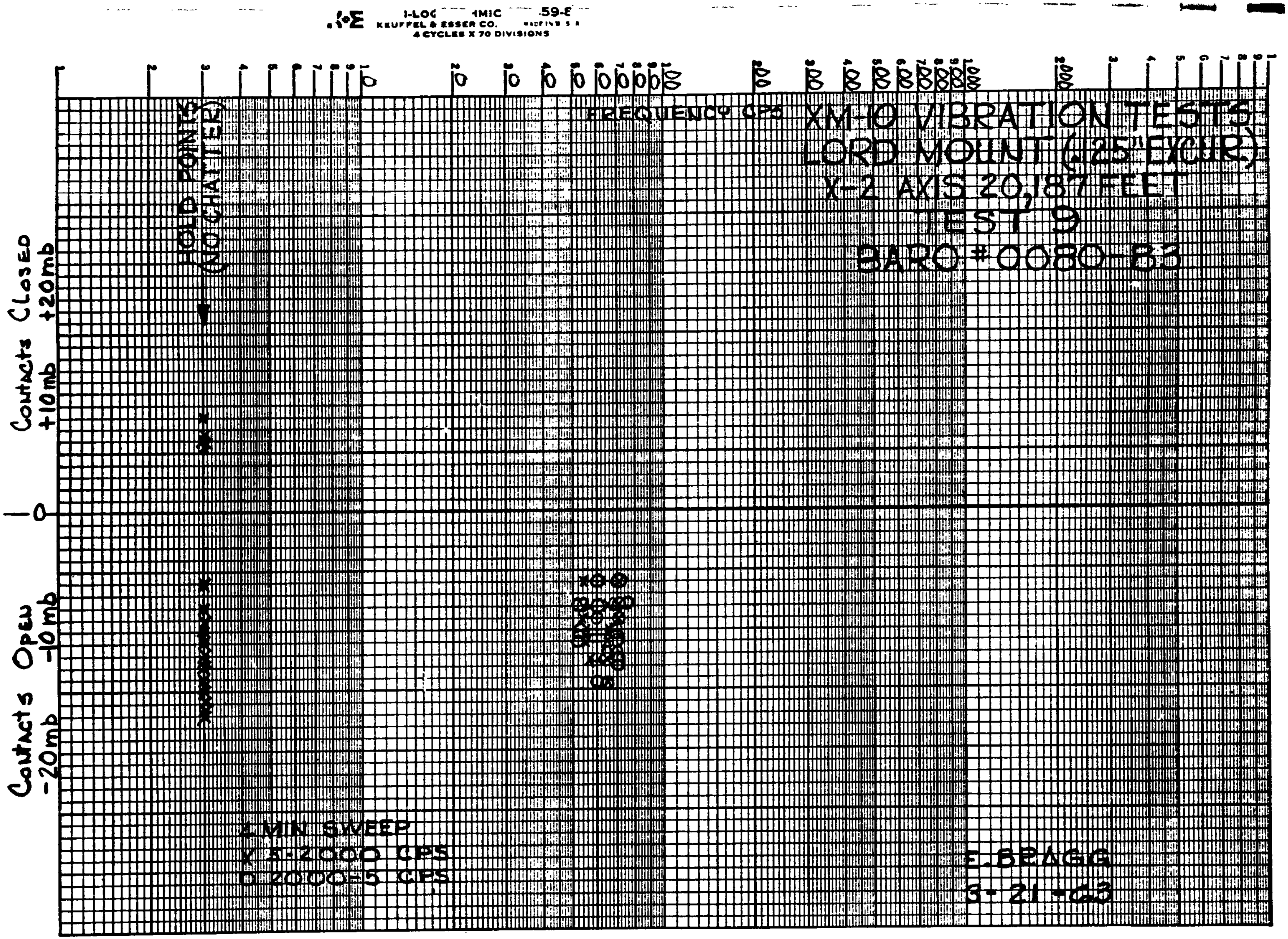

K&E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNT (.125" EXCUR)
X-2 AXIS 49,995 FEET
TEST 6
BARO #0075-B3
CONTACTS CLOSED +20mb
+10mb
0
CONTACTS OPEN -10mb
-20mb
HOLD POINTS (NO CHATTER)
10 MIN SWEEP
● 5-2000 CPS
△ 2000-5 CPS
E. BRAGG
3-21-63



K+E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-O VIBRATION TESTS
LORD MOUNT (.125 EXCUR)
X-2 AXIS 10,216 FEET
TEST 7
BARO # 0080-B3
HOLD POINTS
(NO CHATTER)
Contacts Closed
+20mb
+10mb
0
-10mb
-20mb
Contacts Open
4 MIN SWEEP
X 5-2000 CPS
O 2000-5 CPS
E. BRAGG
3-21-63

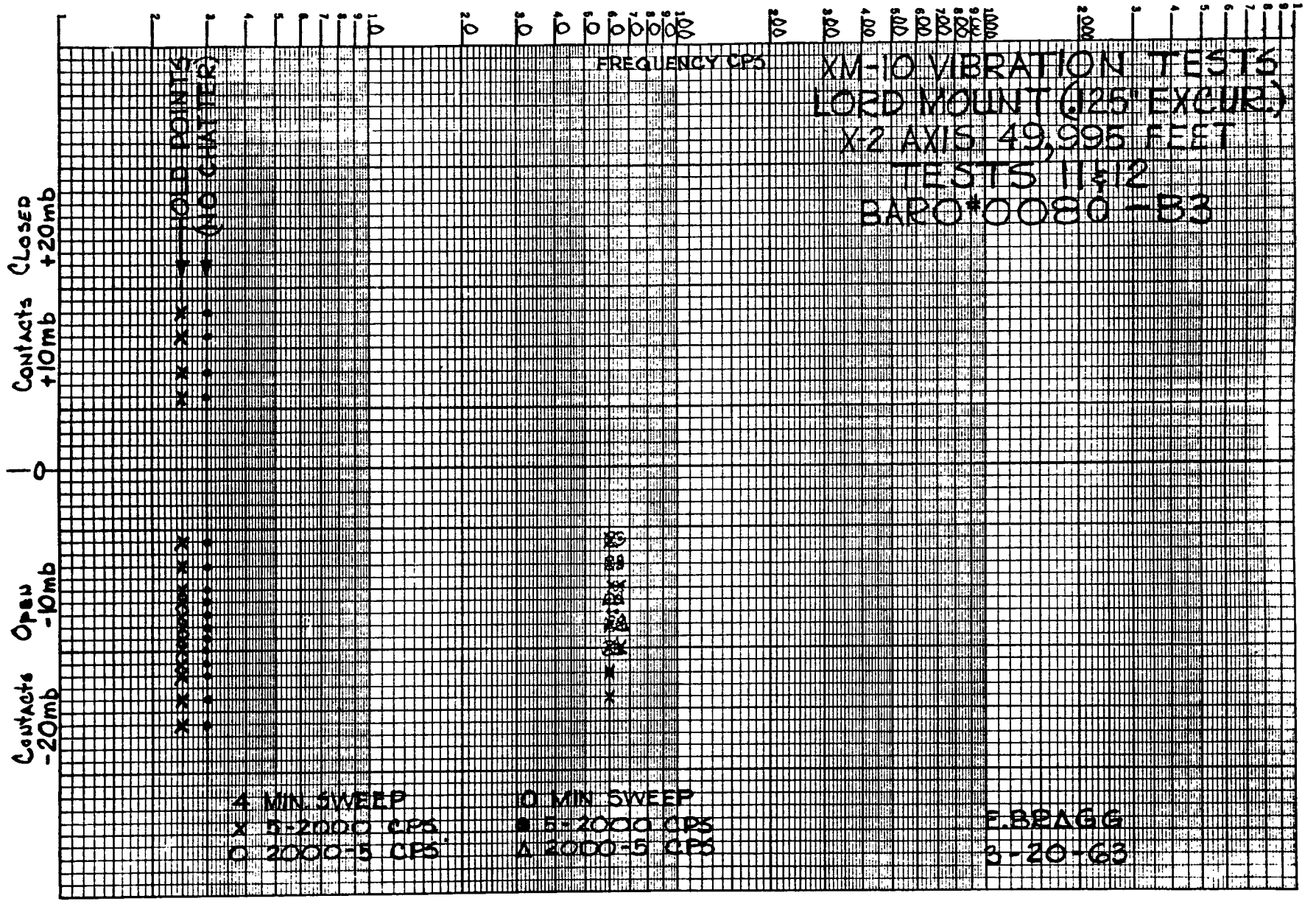


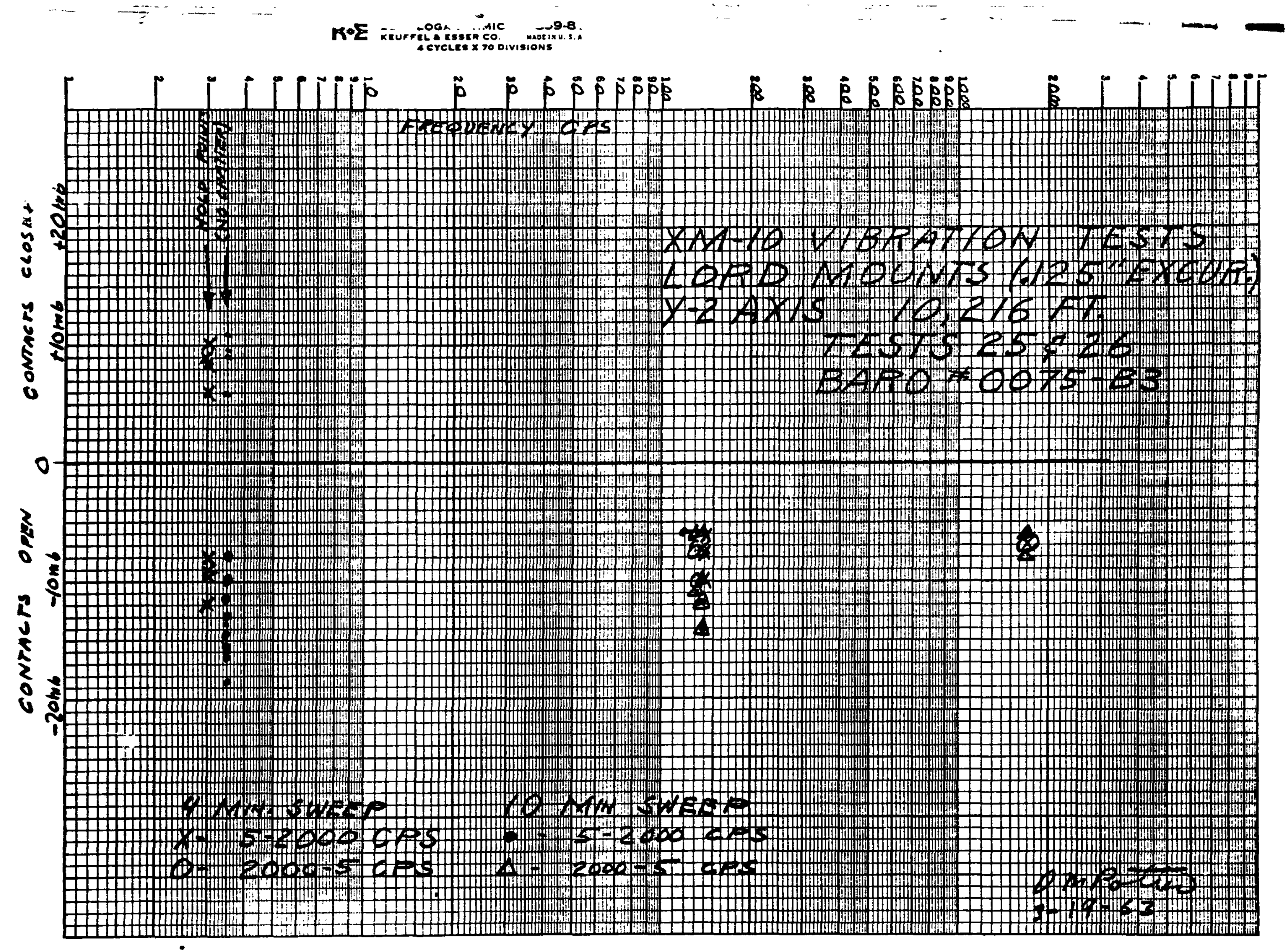
K+E LOGARITHMIC 9-81
KEUFFEL & ESSER CO. MADE IN U.S.A.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNT (.125" EXCUR)
X 2 AXIS @ 2/16 FEET
TEST 8
BARO #0080-B3
HOLD POINTS (NO CHATTER)
Contacts Closed +20mb +10mb
0
Contacts Open -10mb -20mb
○ MIN SWEEP
■ 5-2000 CPS
▲ 2000-5 CPS
E. BRAGG
3-21-63



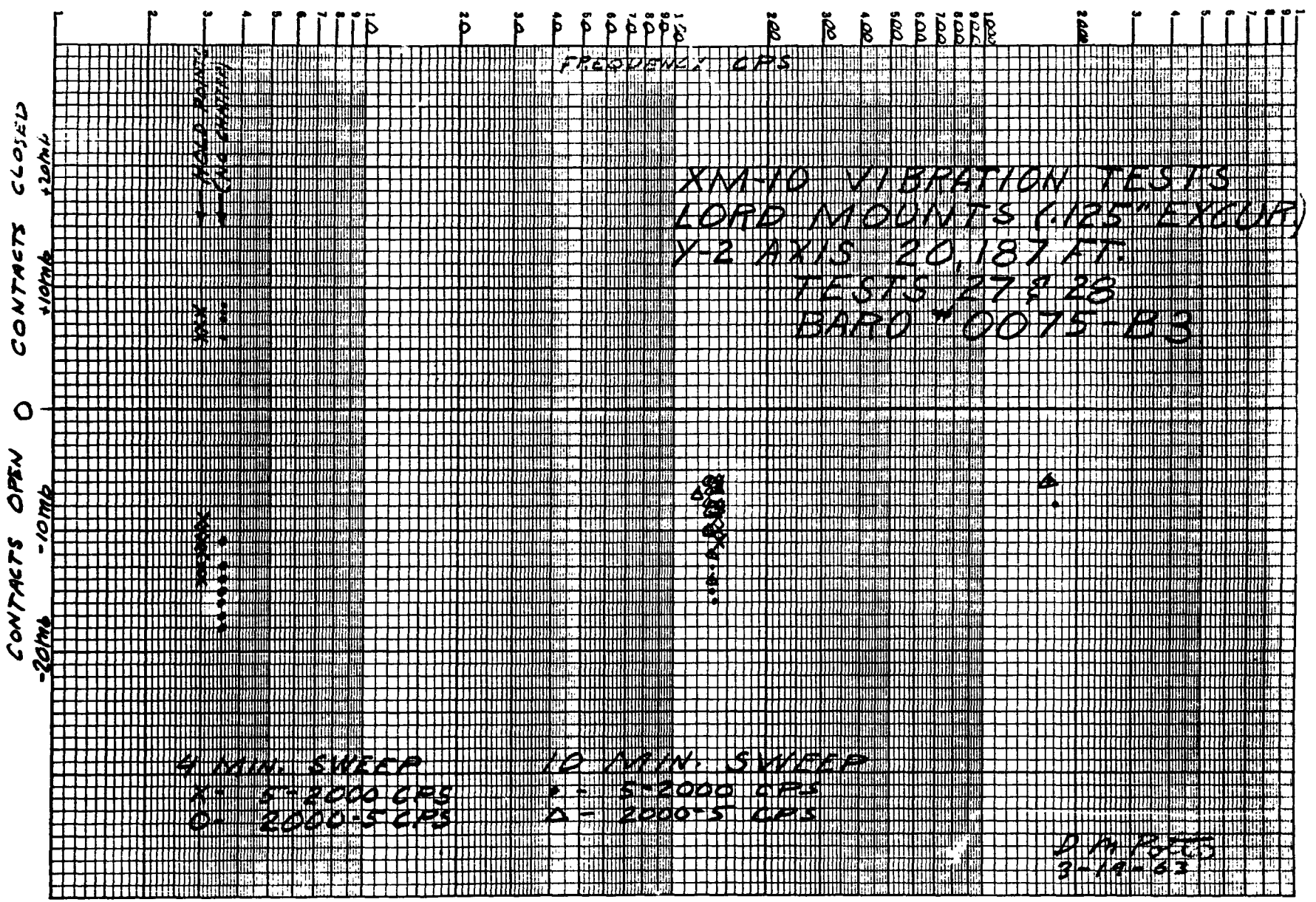
XM-10 VIBRATION TESTS
LORD MOUNT (.125" EXCUR)
X-2 AXIS 20,187 FEET
TEST 9
BARO #0080-B3
FREQUENCY CPS
HOLD POINTS (NO CHATTER)
Contacts Closed +20mb
+10mb
0
Contacts Open -10mb
Contacts -20mb
4 MIN SWEEP
X 5-2000 CPS
O 2000-5 CPS
E. BRAGG
3-21-63

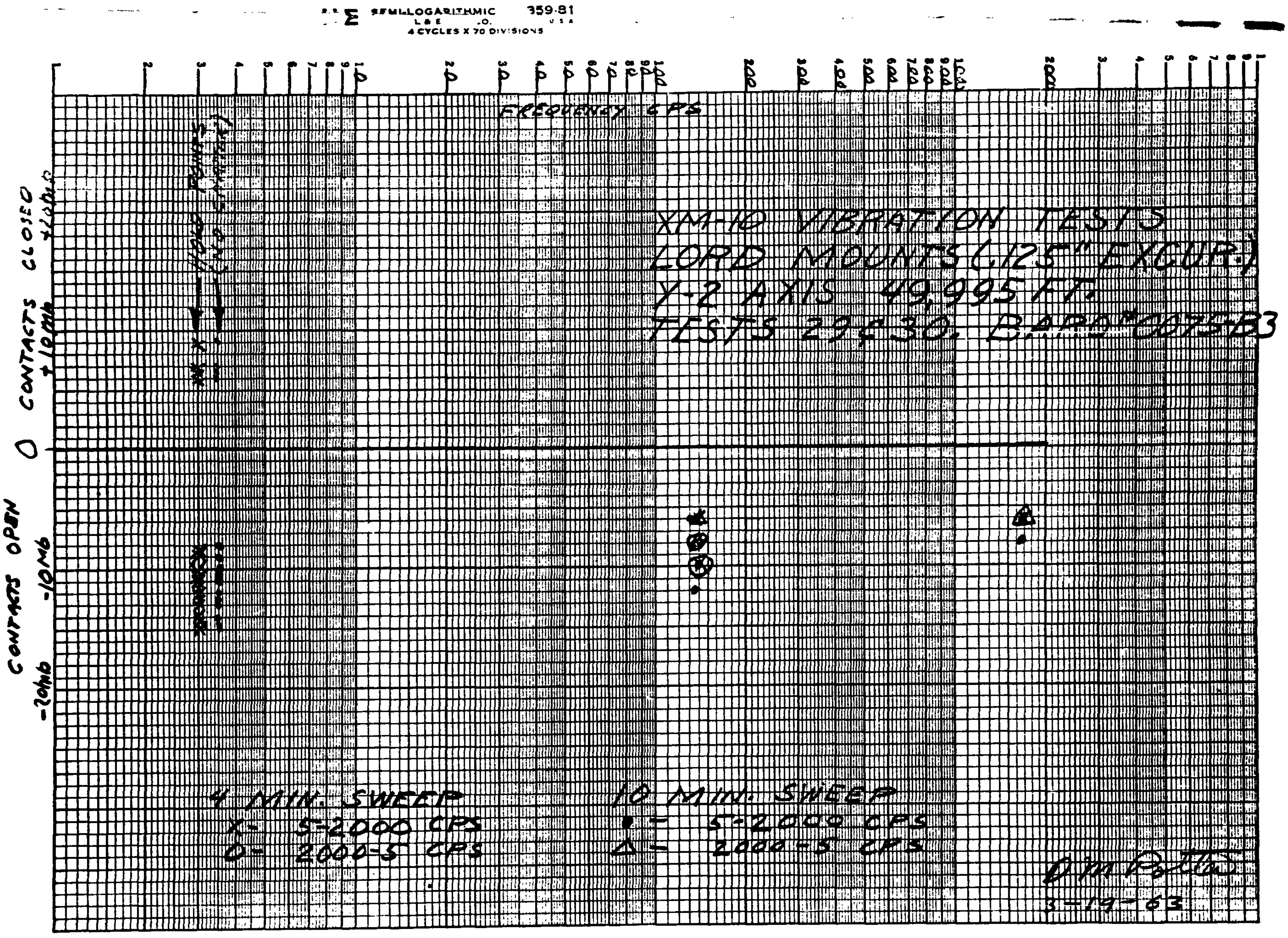
XM-10 VIBRATION TESTS
LORD MOUNT #26 "Exane"
X-Z AXIS 20-87 FEET
BARGE #0838-B3
FREQUENCY (CPS)
HOLD POINTS
(NO CHATTER)
Contacts Open
-20mb -10mb
Contacts Closed
+10mb +20mb
20 MIN SWEEP
5-200-5 CPS
5-200-5 CPS
5-21-5 CPS
5-21-5 CPS
K&E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS


K&E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO. MADE IN U. S. A.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNT (.125" EXCUR.)
X-2 AXIS 49,995 FEET
TESTS 11 & 12
BARO*0080-B3
Contacts Closed +20mb
Contacts +10mb
0
Contacts Open -10mb
Contacts -20mb
4 MIN. SWEEP
x 5-2000 CPS.
○ 2000-5 CPS.
10 MIN. SWEEP
● 5-2000 CPS
Δ 2000-5 CPS
F. BRAGG
3-20-63

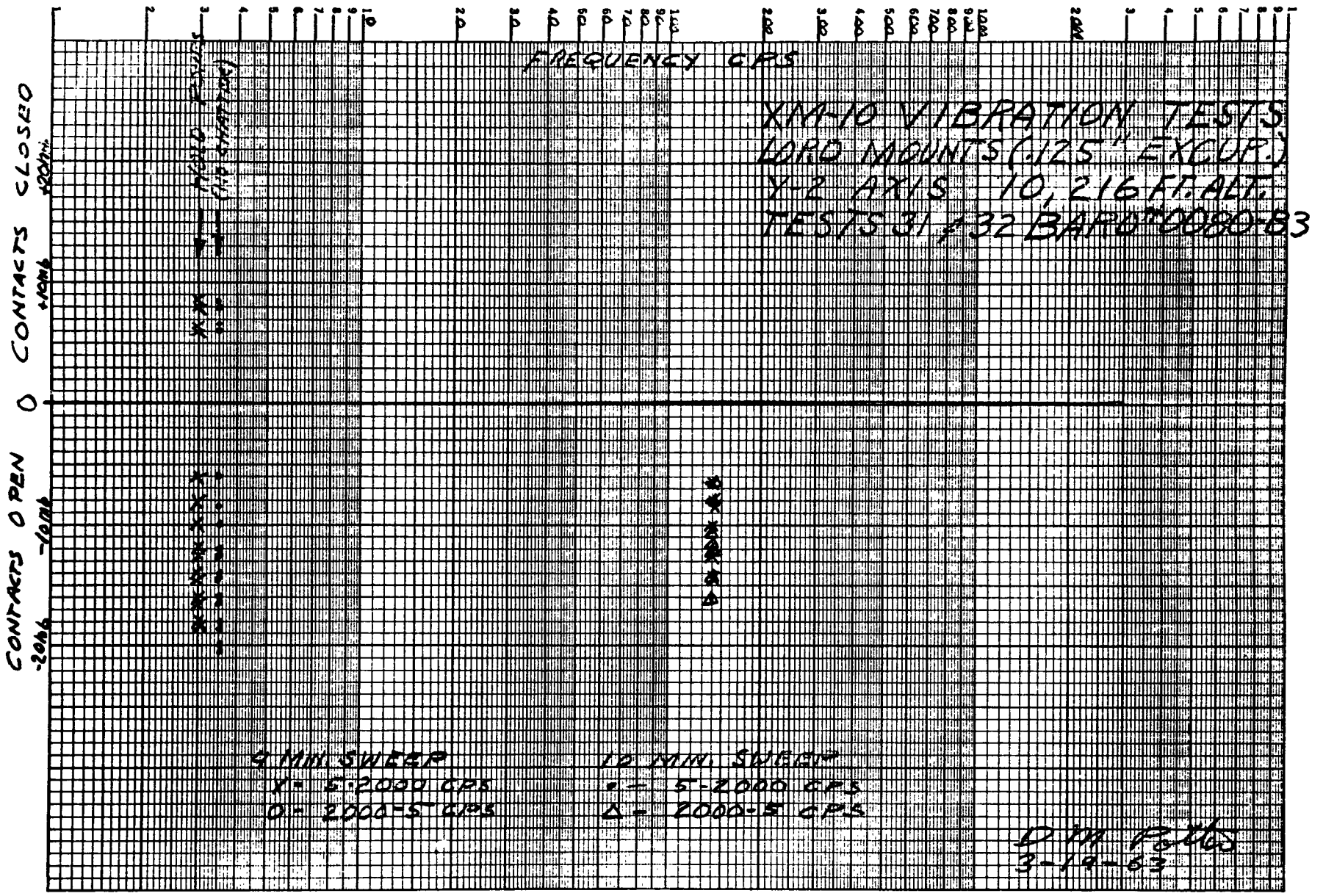


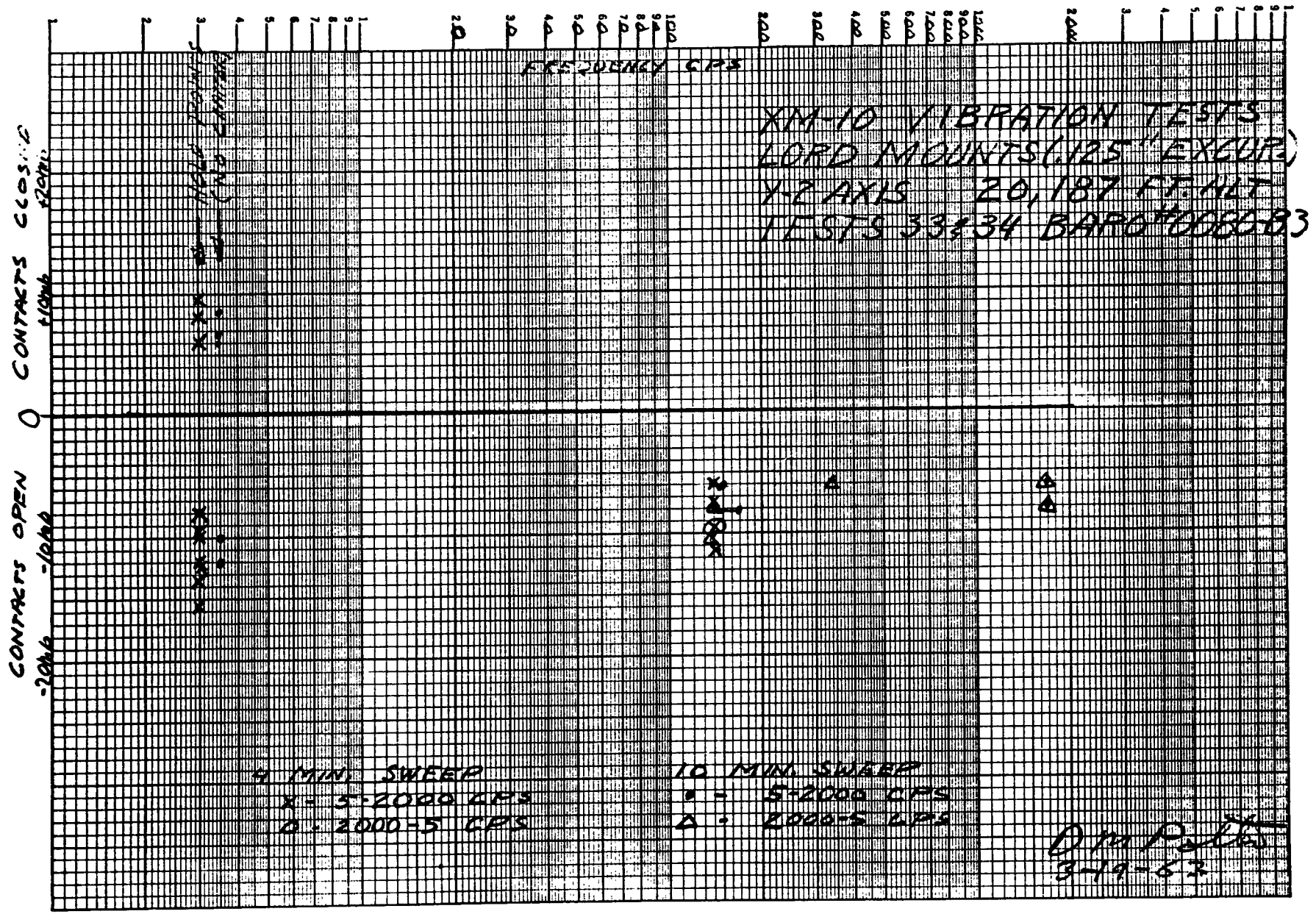
FREQUENCY CPS
HOLD POINT
(NO CHATTER)
XM-10 VIBRATION TESTS
LORD MOUNTS (.125" EXCUR.)
Y-2 AXIS 10,216 FT.
TESTS 25 & 26
BARO #0075-B3
CONTACTS CLOSED
+20 mb
+10 mb
0
-10 mb
-20 mb
CONTACTS OPEN
4 MIN. SWEEP
X - 5-2000 CPS
O - 2000-5 CPS
10 MIN SWEEP
● - 5-2000 CPS
Δ - 2000-5 CPS
3-19-63

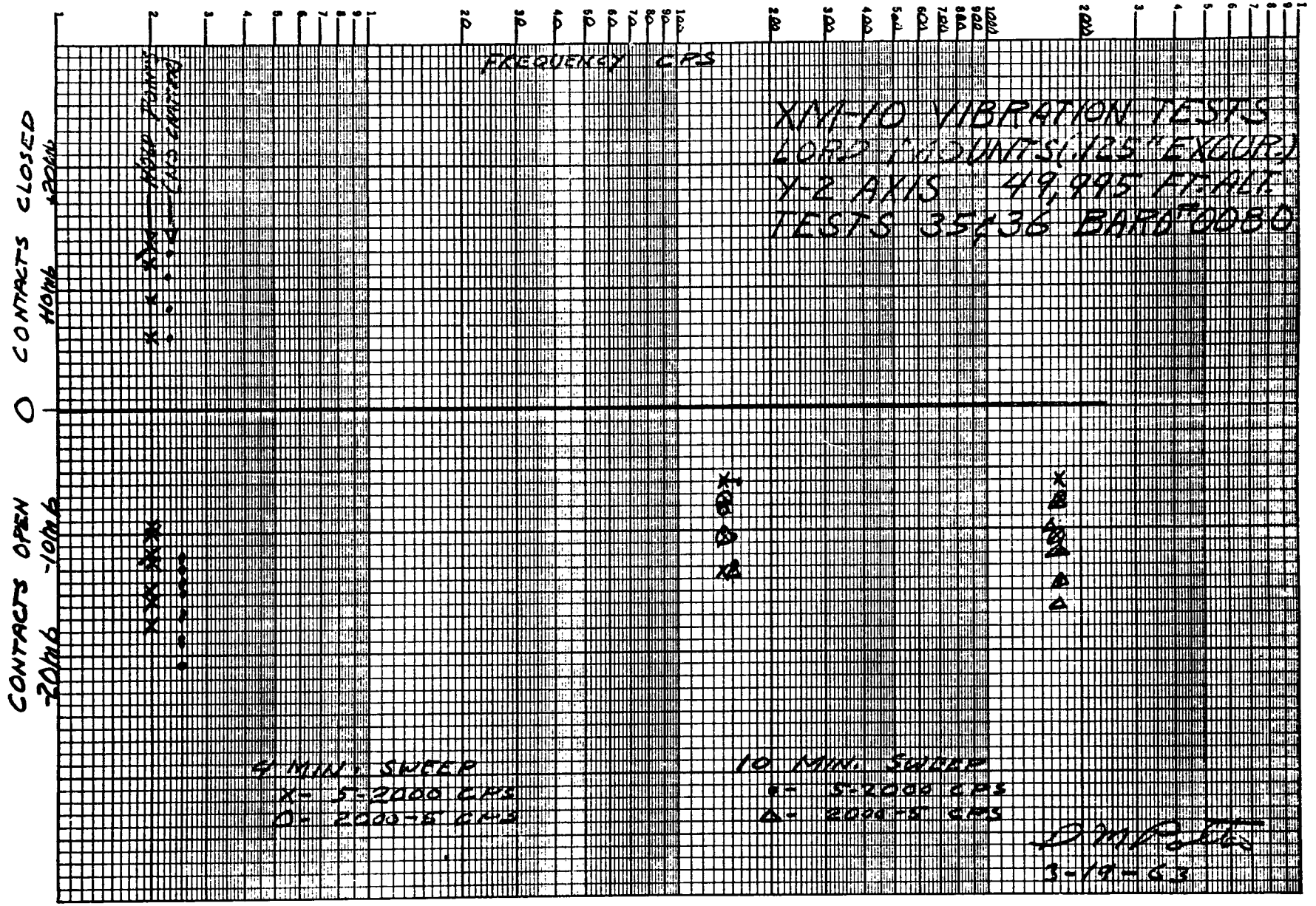

K&E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
CONTACTS OPEN 0 CONTACTS CLOSED
+20mb
+10mb
-10mb
-20mb
XM-10 VIBRATION TESTS
LORD MOUNTS (.125" EXCUR)
Y-2 AXIS 20,187 FT.
TESTS 27 & 28
BARO .0075-83
4 MIN. SWEEP
X - 5-2000 CPS
O - 2000-5 CPS
10 MIN. SWEEP
• - 5-2000 CPS
Δ - 2000-5 CPS
3-14-63



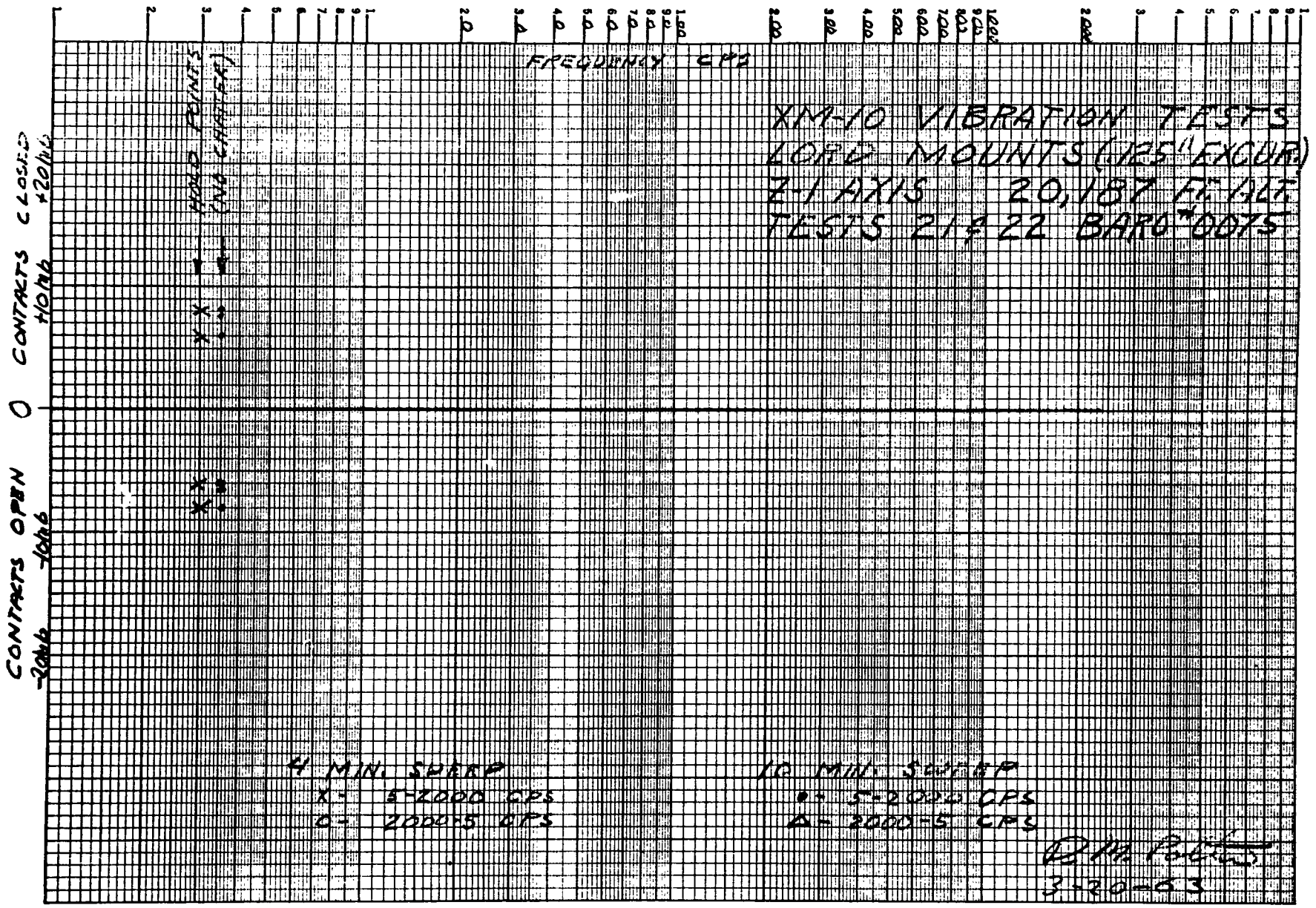
SEMILOGARITHMIC 359-81
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNTS (.125" EXCUR.)
Y-2 AXIS 49,995 FT.
TESTS 29 & 30. BAPD*0075B3
CONTACTS CLOSED
+10mb
+20mb
0
CONTACTS OPEN
-10mb
-20mb
4 MIN. SWEEP
X - 5-2000 CPS
O - 2000-5 CPS
10 MIN. SWEEP
● - 5-2000 CPS
△ - 2000-5 CPS
3-19-63

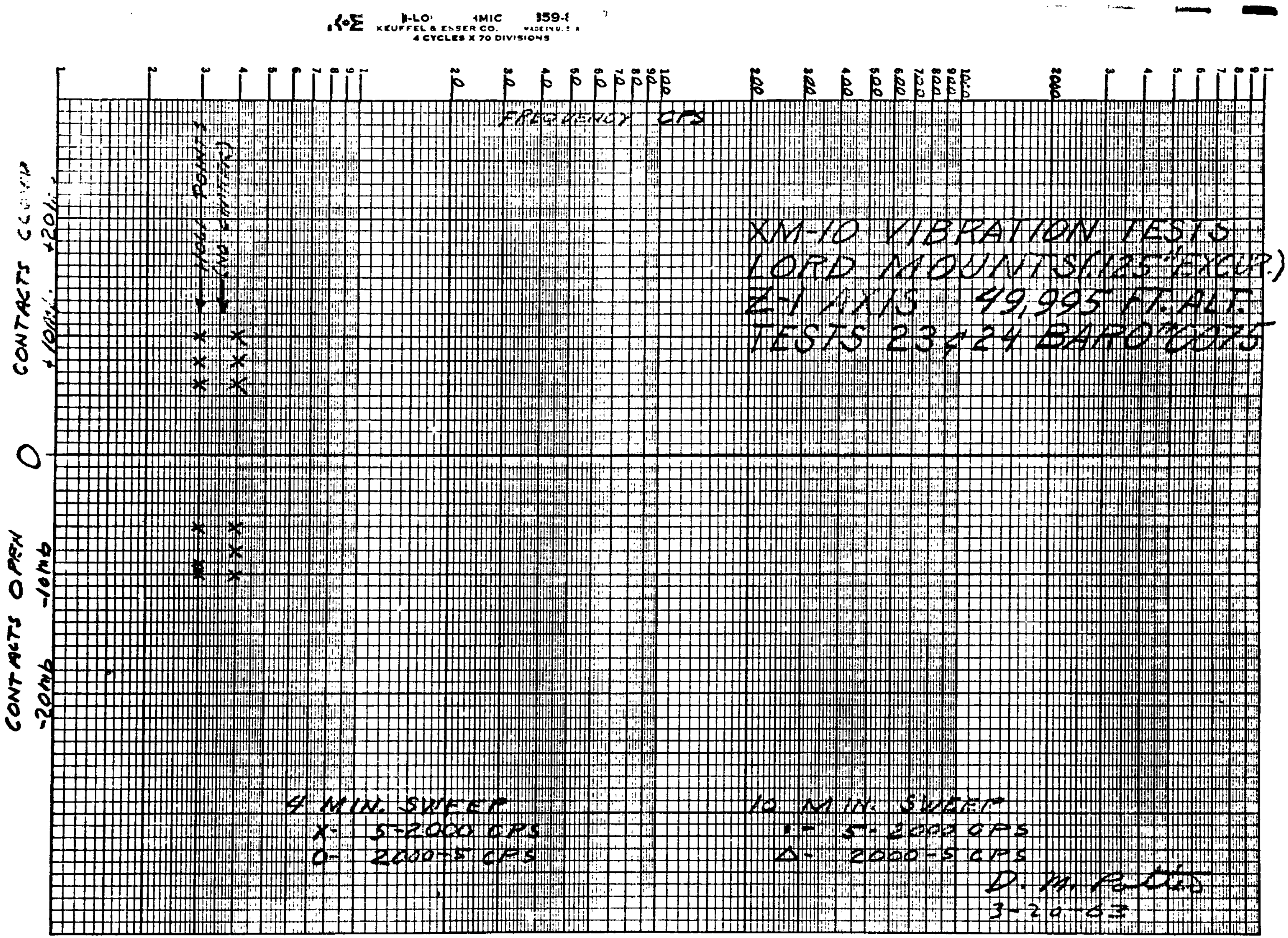

K&E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO. MADE IN U.S.A.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNTS (.125" EXCUR.)
Y-2 AXIS 10,216 FT. ALT.
TESTS 31 & 32 BARO 20.80-83
CONTACTS CLOSED
CONTACTS OPEN
0
+10db
-10db
-20db
+20db
4 MM SWEEP
X - 5-2000 CPS
O - 2000-5 CPS
12 MM. SWEEP
• - 5-2000 CPS
Δ - 2000-5 CPS
D IN FLT
3-19-63

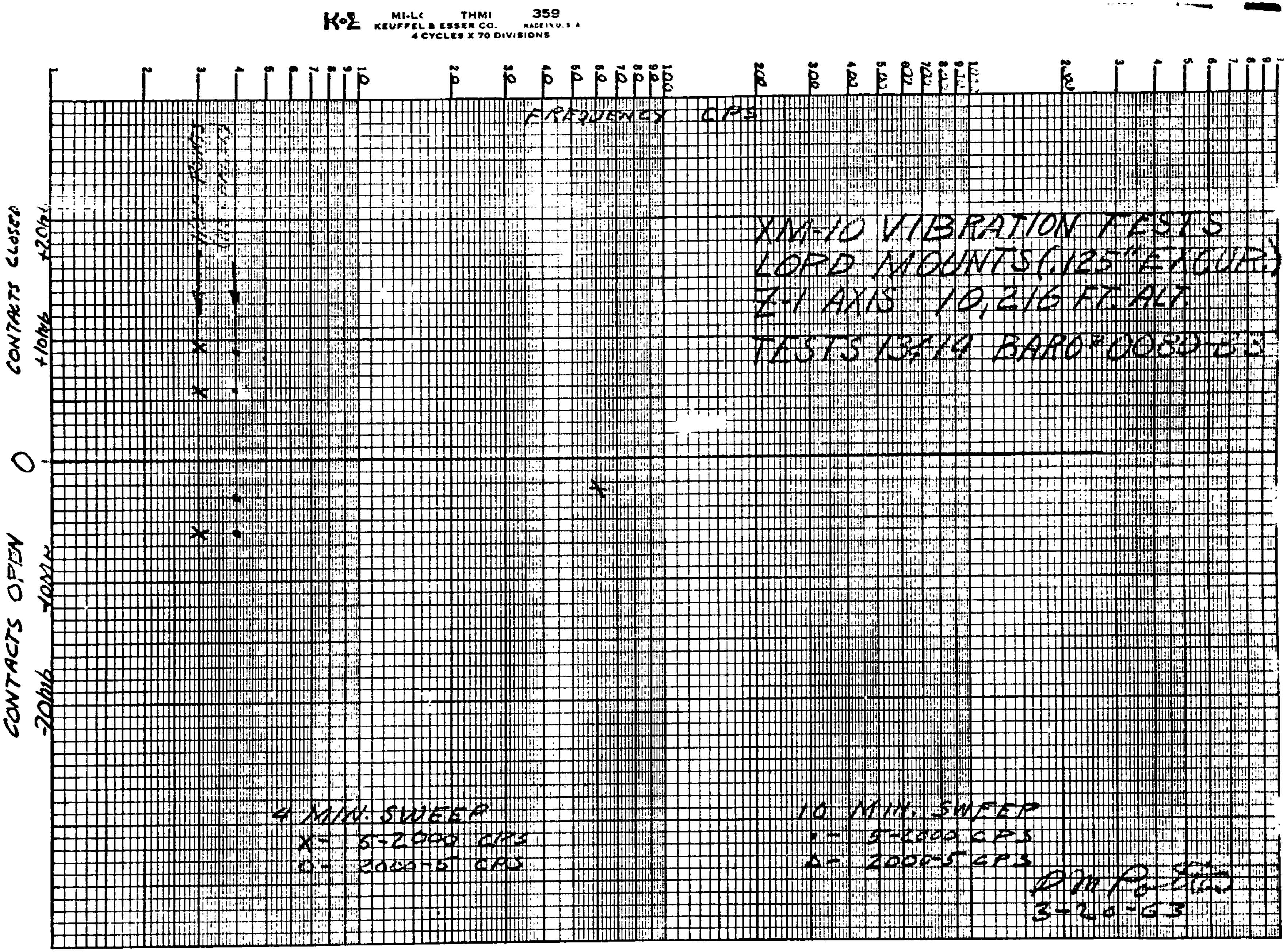

K&E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO. MADE IN U.S.A.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNTS (.125" EXCUR.)
Y-Z AXIS 20,187 CT. NET
TESTS 33 & 34 BAPO #0080-83
CONTACTS CLOSED
CONTACTS OPEN
4 MIN. SWEEP
X - 5-2000 CPS
O - 2000-5 CPS
10 MIN. SWEEP
• - 5-2000 CPS
Δ - 2000-5 CPS
3-19-63

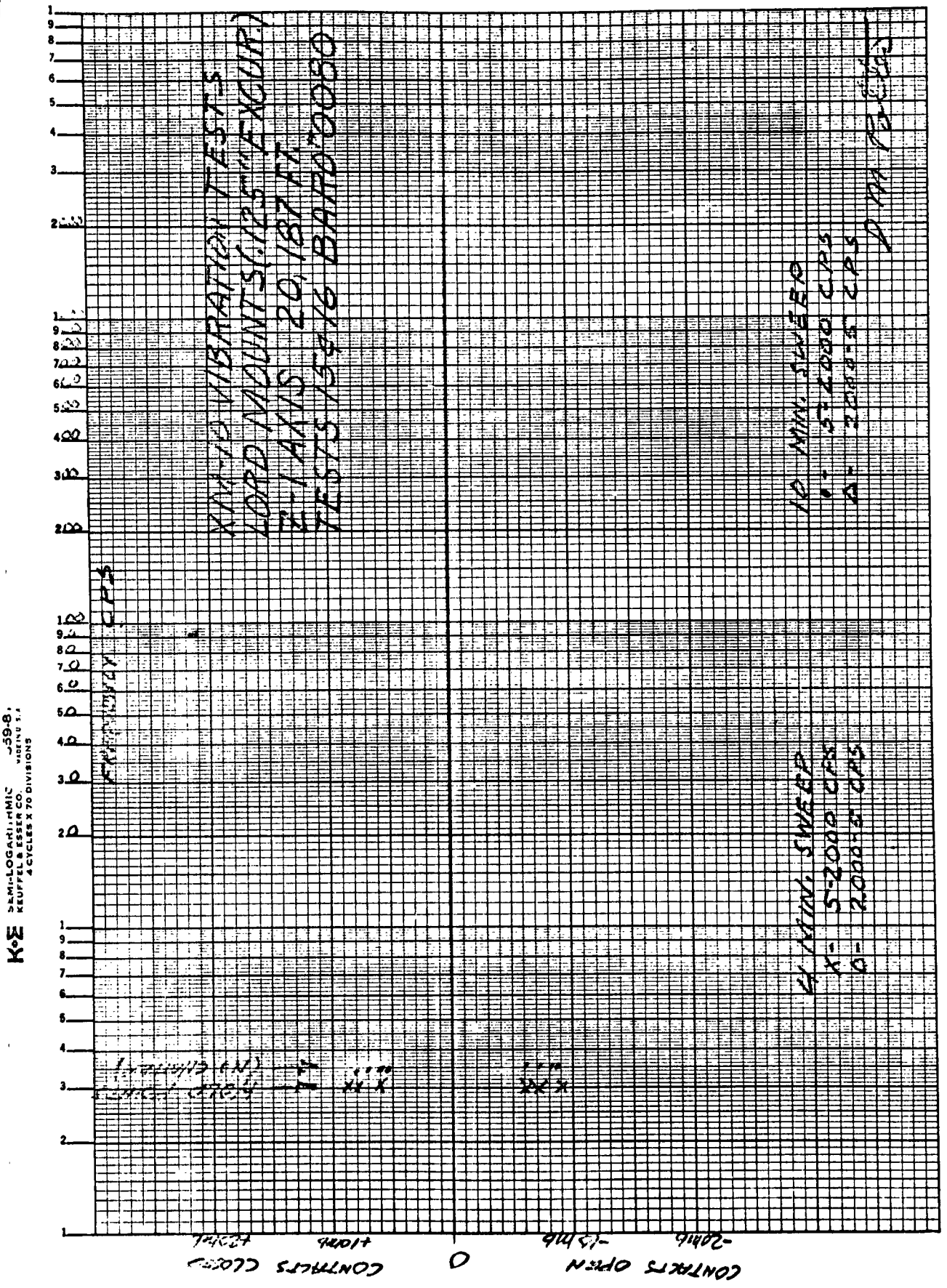

K+E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XNF-10 VIBRATION TESTS
4 OR 2 UNITS .125" EXCURS.
Y-2 AXIS 49,995 FT. LBS.
TESTS 35,36 BARO 29.80
CONTACTS CLOSED
HOME +20mA
0
CONTACTS OPEN
-10mA 20mA
4 MIN. SWEEP
X- 5-2000 CPS
O- 2000-5 CPS
10 MIN. SWEEP
•- 5-2000 CPS
Δ- 2000-5 CPS
3-19-63

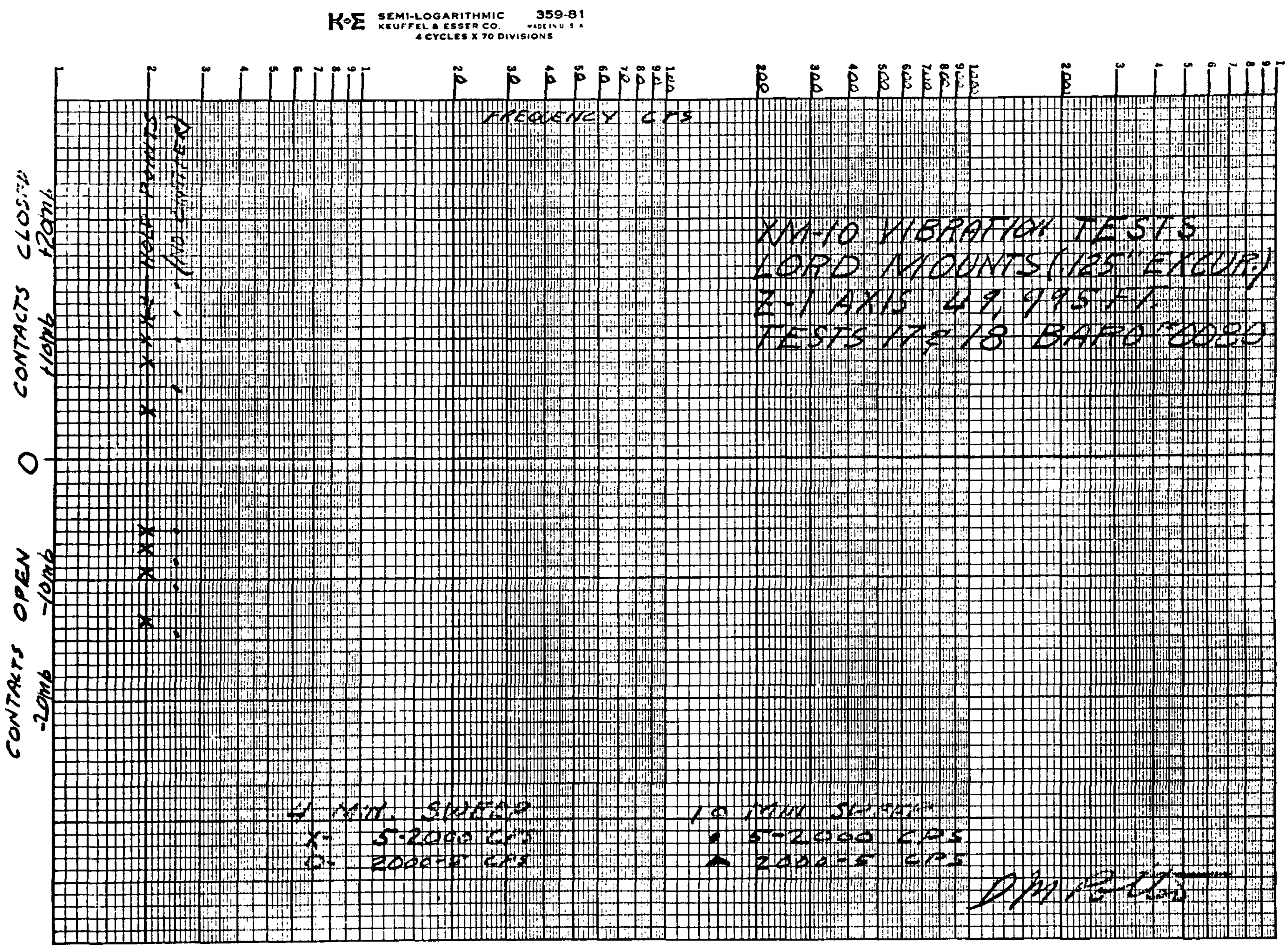
CONTACTS OPEN
0
CONTACTS CLOSED
20MΩ
10MΩ
2MΩ
1MΩ
500KΩ
200KΩ
100KΩ
50KΩ
20KΩ
10KΩ
5KΩ
2KΩ
1KΩ
500Ω
200Ω
100Ω
50Ω
20Ω
10Ω
5Ω
2Ω
1Ω
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS


K&E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNTS (.125" EXCUR.)
Z-1 AXIS 20,187 FT. LBS.
TESTS 21 & 22 BARO .0075
CONTACTS CLOSED +20Hz
CONTACTS OPEN -20Hz
0
10Hz
10Hz
(NO CHATTER)
4 MIN. SWEEP
X - 5-2000 CPS
O - 2000-5 CPS
10 MIN. SWEEP
• - 5-2000 CPS
Δ - 2000-5 CPS
3-20-63


XM-10 VIBRATION TESTS
LORD MOUNTS (.125" EXCUR.)
Z-1 AXIS 49,995 FT. ALT.
TESTS 23 & 24 BARO CONTS
FREQUENCY CPS
CONTACTS CLOSED
CONTACTS OPEN
+20mb
+10mb
0
-10mb
-20mb
4 MIN. SWEEP
X- 5-2000 CPS
O- 2000-5 CPS
10 MIN. SWEEP
▪- 5-2000 CPS
Δ- 2000-5 CPS
D. M.
3-20-63


K+E MI-LOG THMI 359
KEUFFEL & ESSER CO. MADE IN U.S.A.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNTS (.125" EXCUR.)
Z-1 AXIS 10,216 FT. ALT.
TESTS 13-19 BARO
CONTACTS CLOSED
+20mb
+10mb
0
-10mb
-20mb
CONTACTS OPEN
4 MIN. SWEEP
X - 5-2000 CPS
O - 2000-5 CPS
10 MIN. SWEEP
- 5-2000 CPS
Δ - 2000-5 CPS
3-26-63


CONTACTS CLOSED
CONTACTS OPEN
0
+20db
+10db
-10db
-20db
K&E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO. MADE IN U.S.A.
4 CYCLES X 70 DIVISIONS


K·E SEMI-LOGARITHMIC 359-81
KEUFFEL & ESSER CO. MADE IN U.S.A.
4 CYCLES X 70 DIVISIONS
FREQUENCY CPS
XM-10 VIBRATION TESTS
LORD MOUNTS (.125" EXCUR.)
Z-1 AXIS 47,795 F.I.
TESTS 17 & 18 BARO 2080
HOLD POINTS
(NO CHATTER)
CONTACTS CLOSED
+20mb
+10mb
0
CONTACTS OPEN
-10mb
-20mb
4 MIN. SWEEP
X- 5-2000 CPS
O- 2000-5 CPS
10 MIN SWEEP
● 5-2000 CPS
▲ 2000-5 CPS

APPENDIX "C"

SUMMARY TABLE OF XM-10 BAROSWITCHES DELIVERED UNDER CONTRACT MODIFICATION 7

S/N	Contact Material	Vibration Isolators	Date Shipped	Remarks
0068-L2	Pt-W	Lord (2)	1-7-63	Note 3
0069-L2	Pt-W	Lord (2)	1-7-63	
0070-A3	Pt-W	Lord (2)	2-6-63	
0071-A3	Pt-W	Lord (2)	2-6-63	
0072-A3	Pt-W	Lord (2)	2-6-63	
0073-A3	Pt-W	Lord (2)	2-6-63	
0074-A3	Pt-W	Lord (2)	2-6-63	
0075-B3	Pt-W	-	-	Retained at Friez for Vibration Tests
0076-B3	Pt-W	Lord (2)	2-6-63	
0078-B3	Pt-W	Lord (2)	2-6-63	
0079-A3	Pt-W	Lord (2)	2-6-63	
0080-B3	Pt-W	-	-	Retained at Friez for Vibration Tests
0081-B3	Pt-W	Lord (2)	2-11-63	
0082-B3	Pt-W	Lord (2)	2-6-63	
0083	Pt-W	-	-	On 60 Day Drift Test 3-14-63
0084-B3	Pt-W	Lord (2)	2-11-63	

APPENDIX "C"
- continued -

S/N	Contact Material	Vibration Isolators	Date Shipped	Remarks
0085	Pt-W	-	-	On 60 Day Drift Test 3-14-63
0087	Pt-W	-	-	On 60 Day Drift Test 3-14-63
0088	Pt-W	-	-	On 60 Day Drift Test 3-14-63
0089	Pt-W	-	-	On 60 Day Drift Test 3-14-63
0090	Pt-W	-	-	On 60 Day Drift Test 3-21-63
0092	Pt-W	-	-	On 60 Day Drift Test 3-14-63

NOTES:

1. Contacts: 91% platinum, 9% tungsten cross-wire configuration.
2. Elastomer selected to permit .093" max. excursion at 4 "G's" constant sinusoidal vibration.
3. Returned to Friez for rework (see Progress Report No. 23). Reshipped March 20, 1963.

APPENDIX D

EVALUATION TEST SCHEDULE FOR SETTER XT-4126-A

PERIOD STARTING APRIL 29, 1963